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NEW YORK STATE JOURNAL OF MEDICINE

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NEW YORK STATE JOURNAL OF MEDICINE

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EDITORIAL DEPARTMENT

LEGAL WORK OF THE MEDICAL SOCIETIES.

AMONG the important activities of the organized medical profession of this State is its legal work. This is carried on under the two fundamental divisions of legal practice, prosecution and defense. The County Societies prosecute, the State Society defends. Legal defense, as carried on by the State Medical Society, is well understood and appreciated in many parts of the State, but is inadequately understood in other localities. The work of Mr. James Taylor Lewis in defending members of the State Society against charges of alleged malpractice has been successful to a remarkable degree. It is a satisfaction to be able to announce that no case was lost during 1918. In a future number we will consider Mr. Lewis' achievements and write upon the subject of legal defense of the members. We shall confine ourselves at this time to the subject of the prosecution of unlicensed and criminal practitioners.

This is suggested by the publication in another portion of this number of the Annual Report* of George W. Whiteside, Esq., Counsel for the Medical Society of the County of New York. This Society has done more in this field of work than any other agency in this or any other country. Upon the County Societies legal powers are conferred which make them members of a group of organizations, to which are intrusted the duty of inforcing certain provisions of the criminal law. Some of the well known Societies of this group are the Society for the Prevention of Cruelty to Animals, and to Children. While the legal work must be done by an attorney qualified to practice in the New York Courts, the supervision is made a special duty of the Board of Censors. This is proper, as the work is done in the name of the Society and the medical as well as the legal point of view is necessary.

Prosecution is directed against two types of offenders, the illegal and the criminal. The illegal practitioner is one who is not licensed to practice under the laws of the State. His practice may or may not be criminal in character. In some cases he is harmless, for his practice is that of the regular profession. In most cases, however, a criminal element creeps in and he is actually harmful and dangerous. It is an interesting fact that the methods of the modern charlatan constantly change. He is imminently up-to-date and keeps well abreast of every discovery. He frequently imitates the latest scientific methods. In combating him, therefore, the methods of at-

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* See page 24.

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tack must be constantly changed. Many of the legal methods of a decade ago are useless today.

Prosecution of these offenders is no simple task. Their cases appear in such various guises that the prosecutor must determine in every case the charge which is most likely to result in conviction. Some are prosecuted on the charge of false pretense, or false diagnosis; others for grand larceny, blackmail, violation of postal laws, or practice by corporations.

New York County was a pioneer in this work. The field was new and unworked. The establishing of legal principles was imperative. Many of the prosecutions were instituted, therefore, not alone to convict an individual criminal, but to establish a legal principle. A simple case would be selected to be followed by cases more and more difficult, based upon the precedents secured. Many of these decisions were carried to the highest courts, and it is a satisfactory fact that they apply to the whole State, and are not limited to the County in which they originated. In law precedent and judicial decisions are of profound importance. So many principles have been established and the foundations so thoroughly laid that less of this type of work is now left to be done. Every year, however, new precedents are being established, for the policy of placing the legal work upon a sound basis has never been lost sight of. While recent results are not as spectacular as some of those of the pioneer days, they are equally important.

In the policy of securing legal principles the abortionists were among the first to be attacked. The first attacks were made upon midwives. In New York City as many as 48,111 mothers have been attended annually in their confinements by midwives. This is largely due to the large foreign population. While the greater number of these women are honorable and conscientious, the opportunities for evil doing are great and the difficulties of apprehending them are also great. The title is too often made the shield for criminal practices.

The most serious aspect of this criminal work was that Doctors of Medicine, legally qualified practitioners, were openly and unblushingly announcing themselves as abortion specialists. After careful preparation the County Society struck at three of the largest and most powerful of this type. They were convicted and sent to Sing Sing. They were later, however, pardoned by Governor Dix. This work has saved the medical profession of the City from the disgrace brought upon it by the open and shameful crimes of some of its members.

Charlatans who play upon the credulity of young men are a particularly vicious type of scoundrel. Extortion and blackmail are constant features of their work. Among seven cases in which the amount of extortion could be certainly ascertained, the aggregate was found to be $15,229. One concern used to sell an ounce of simple ointment for several hundred dollars, the price varying with the patient. It was alleged to be goatlymph. Another concern charged one of its victims $700 for a small bottle of tincture of gentian, which was called radium. It is obvious that it is extremely difficult to obtain evidence in such cases, for the victim will submit to the grossest imposition rather than face publicity. These practitioners are mostly registered physicians. It is possible to reach them only on such a charge as grand larceny, extortion, or blackmail. No registration law can reach them and many other offenders.

The Counsel of the Society has in many cases received aid from the Post Office authorities. This is the only condition under which numbers of violators of the law can be rounded up at the same time. But even here, each case must be considered individually.

A most important principle was established in limiting the use of the title "Dr." This was one which particularly interested the State Education Department. A man was prosecuted (People vs. Somme) who held a diploma from a western medical college, but was not licensed in New York. The question raised in the trial was whether or not a graduate of a medical school, not recognized by the Regents, can use the title "Dr." in such a way as to convey the impression that he is a practitioner of medicine without being registered as such. The decision of the Court on this point was as follows: "Neither the lawyer nor the doctor coming from another state or holding a degree of a law or medical school in another state can hold himself out or advertise himself in such a manner as to convey the impression that he is a legal practitioner, unless legally licensed to practice in this State." This simply means that in New York a man, although he holds the degree of M.D. and may use it in a social or literary way, cannot use it for professional purposes unless he is licensed to practice medicine.

Another valuable principle was established by a long and expensive prosecution (People vs. Woodbury). The principle is that a corporation cannot practice medicine. The physician takes a prescribed course in a medical college, passes a personal examination, receives a personal diploma, and passes a personal State examination. License to practice medicine, therefore, is a purely *personal* one and a corporation cannot fulfil such a requirement. This decision has proved to be one of far-reaching importance, for it involves the legal profession and every other profession where a personal license is required.

Several erroneous ideas regarding legal prosecution are common through the state. One is a misunderstanding of the definition of the practice of Medicine, particularly the expression as to one who holds himself out as able to diagnose and treat disease. The legal definition is as follows: "A person practices medicine within the meaning of this act who holds himself out as being able to diagnose, treat, operate, or prescribe for any human disease, pain, injury, deformity, or physical condition, and who shall either offer or undertake, by any means or method, to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity, or physical condition."

There are here two distinct propositions: 1. the person *"holds himself out* as being able to diagnose, treat, etc.; 2. he *offers or undertakes* to diagnose, treat, etc. The courts hold that these two propositions are inseparable.

American citizens are not fined or thrust into jail on rumor or popular belief. Illegal practitioners cannot be taken in a net; they must be taken by hook and line, and each hook must be specially baited. That at least is the experience of New York City.

Another error is the supposition that these practitioners can be apprehended through their advertising. The fact is, the illegal practitioners of the chiropractic type advertise in but few cases. Some doctors advertise and some chiropractors advertise, but the great bulk of these irregular practitioners gain their practice as physicians do, by personal reference from patient to patient. Mr. Whiteside, with his long experience and profound legal knowledge has been unable to convict on advertising alone.

A few years ago it was comparatively easy to convict unlicensed practitioners. The difficulties have become excessive. They have been coached by lawyers and evade methods of detection. Two serious difficulties have developed in recent years. They will accept no patient unless he brings a reference from some trusted patient. It is impossible for an investigator to reach most of these offenders.

The second difficulty is the expense involved in securing evidence. It is impossible in most cases for an investigator to obtain a single treatment. Patients are taken only for a series of treatments, for which a large sum must be paid in advance or no treatment is given. This is simply a statement of existing conditions, and gives no information to unlicensed practitioners who knew more about the subject than physicians do.

Of graver importance than these technical difficulties of prosecution, is the underlying fact that quackery is not a cause but a result. It is a symptom of a deep-seated disease. We are able to treat the symptoms only; the disease we are powerless to cure. In all communities there is a considerable portion of the people who rebel against orderly and established principles, but seek the fantastic and mysterious in medicine and religion. This has always been so and will be so for generations to come. Our grandfathers had Perkins' tractors, Thompsonism, and spiritualism to vex them. Our fathers had sectarian medicine, now almost gone, 92 per cent. of the medical students of today being graduates of non-sectarian schools. In the time of our fathers these attacks upon the established profession were vastly more vexatious and venomous than anything we know about today.

Next came Christian Science, now on the wane. This was soon accompanied by the Keeley Cure, and a swarm of non-drug giving fads. Osteopathy came out of the West. It went up like a rocket and the stick is now coming down. It had palled on the people and grown stale and they began to demand something new. The American is a practical man and is always ready to supply a demand. Chiropractice, therefore, was evolved. It has been adopted by the credulous element of the people and will continue to be a favorite until they tire of it and demand a new fake.

It is our duty to combat this and other systems of quackery and do what we may to mitigate its dangers to the people. We may be sure, however, that if we succeed in eliminating this system, the disease underlying it will evolve others.

Original Articles.

ETIOLOGY OF NEPHRITIS.*

By CHARLES J. HUNT M.D.
CLIFTON SPRINGS, N. Y.

THE etiology of nephritis in this paper is considered practically from a single point of view and no attempt is made to discuss the multitudinous etiological factors heretofore advanced.

Ophuls has fully discussed the problems of histological pathology, recognizing the usual division of acute, subacute and chronic stages but regarding all from both etiological and anatomical bases as some variation of glomerulonephritis.

In our work we have been in agreement with the reasoning of Ophuls, however, confining our attention more particularly to cases in which there were well defined evidences of focal infections and of renal involvement which suggested diffuse hematogenous inflammatory lesions or nephritis with fibrosis.

No attempt is made to differentiate involvement of the individual structures or definitely to established differential diagnosis between tubular nephritis, vascular nephritis or combined types.

Acute conditions have been as carefully excluded as may be possible. In all histories the immediate relationship between acute toxaemias and development of chronic renal disease has been excluded. The history of acute nephritis served to exclude a case from those selected since it was our purpose to study a group in which continuing foci of infection was the only probable etiological factor.

Experience with chronic disease suggests it to be a fair question as to the relative frequency in which the average acute Bright's disease becomes a continuing process. It seems to us a probability that in the vast majority of cases of acute nephritis other etiological factors are the dominant factors.

It is true that the greater number of patients cannot give assistance in fixing the date of onset, not even within a wide range of probability. Recognizing the futility of attempts to establish all the factors or always to determine the dominant factor, we chose from the many cases studied those who had a definitely negative history of poisoning by or the long continuing absorption of mineral poisons or of alcohol, those not having recent acute illnesses and those who did not have concurrent pathological processes commonly thought to be factors in the production of chronic nephritis.

Of all the agents which commonly act upon renal tissue by the production of chronic degeneration, toxins of bacterial origin or the lodgement of bacteria as minute, repeated emboli have been shown to be the most constant. To this, to some extent, our studies have added contributory evidence.

Experimental production of nephritis has for the most part been studied after primary renal damage with metallic poisons, and the role of various normal or facultative pathogens has been established on such a basis, the results having anatomical alterations as the principal for the diagnosis.

In the cases used as the basis of this paper, the influence of metallic or other toxins except chronic foci has been excluded in every way possible and the alteration of functional power before and after the correction of discoverable foci has been used as a criterion for diagnosis and as indicating chronic foci as the most important etiological factor. Because of the difficulty in localizing the place and mode of entry of infection, it is difficult and in most cases impossible to trace each wave of bacterial attack.

We have not ignored the relationship between cardiovascular and gastrointestinal lesions. In fact a case is relatively rare which does not show some well defined change elsewhere than in the kidneys. Where there has been cardiac incompetency of type and degree sufficient to alter the functional capacity of the kidneys, appropriate observations have been made. Vascular hypertension with full cardiac compensation has not been regarded as a factor in the criteria of the preconceived etiology. However, we have borne in mind the fact that alteration of renal function *may be* more or less directly the result of marked increase of high blood pressure, we have assumed from premises which cannot be discussed in this paper that increase of blood pressure results from the same factor which ultimately gives rise to renal lesion and for that reason is to be regarded more as concurrent or even precursor of the renal lesion instead of a direct factor in production as it was formerly regarded.

Because we have had an unusual opportunity to apply intensive methods of investigation in a large series of cases and also because we have been able to keep our patients under observation both during corrective and convalescent periods with subsequent repetition of intensive investigation, it has been possible to correlate cause and effect in so far as this single etiological factor is concerned.

In a large series of cases it was possible to make intratonsillar cultures before operation and to check these findings against cultures made subsequent to tonsillar enucleation.

It is interesting to observe that in making intratonsillar cultures we practically never recovered more than three types of micro-organisms, more constantly recovering one or two and the findings after tonsillectomy rarely failed to coincide with the earlier observations.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 21, 1918.

Dental cultures were not made. We found that it was practically impossible to study with any definiteness, cultures made directly from beneath the gum margins. The association with the oral surgeon was too remote for making intracanalicular cultures.

Blood cultures were made in a large series of cases, but from only two a streptococcus, eight others showing a diphtheroid form which was mildly pathogenic for laboratory animals.

Complement deviation studies were routinely made with both gonococcic and syphilitic antigen, using both specific and cholesternized antigens for the latter. In two cases of the series showing cerebrospinal phenomena the spinal fluid was studied. The result of these studies were uniformly negative.

Arbitrarily we retained in the series only those (except one) whose blood non-protein nitrogen was below 60 mgm. per 100 c.c. blood. The relation of phenolsulphonaphthalein elimination was not used for the exclusion of cases unless it was below 20 per cent. at the end of two hours.

In order to standardize each case immediately after the history and physical examination had been made the patient was placed on a nephritic test diet founded upon the work carried out at Johns Hopkins Hospital, Peter Bent Brigham Hospital in Boston and the Presbyterian Hospital in New York. The dietary contains approximately 13.4 grams nitrogen, 8.5 grams sodium chloride and 1800 cubic centimeters of fluid during each twenty-four-hour period. Patients were not permitted to have eliminating baths, cathartics or enemata during days of observation. The meals served in the room by a specially selected waitress and all foods and fluid not ingested were returned to the diet kitchen for remeasurement. By this means a more careful check was made of endogenous nitrogen and sodium chloride.

A specific gravity fixation test was then made following the suggestion of Mosenthal. The bladder was emptied at 7 A. M. and two-hourly collections were made from that time until 9 P. M. and the night collection was made from 9 P. M. until 7 A. M. The quantative distribution between day and night, the meal response elimination, the reversion of the average day and night specific gravities, and the occurrence or failure of the twenty-four-hour balance were used in subsequent studies.

The day following the specific gravity fixation test a fractional portion of the twenty-four hour period, *two hours*, was set aside long enough after the morning meal so that the "meal response" would not interfere. The patient voided urine to waste at the beginning of the period. Two, one-hour collections were then made. One hour after commencing the collection of urine, blood was collected in potassium oxalate and immediately put through laboratory routine.

At the same time the patient was weighed (stripped) and the weight computed in kilograms.

On the following day a phenolsulphonaphthalein test was made, using the same technique as described by Rowntree and Geragthy, with the single exception that all observations were made by a modified Duboscq colorimeter. During the early part of our work only two-hour observations were made, but in the majority of the cases herein reported four-hour observations were made. The point is emphasized because, frequently, errors of collection or of room supervision have been more easily counterchecked, and in addition a longer eliminative period is allowed for the study of both fluid and phthalein response.

Total non-protein nitrogen determinations of the blood were made by the method described by Folin and Denis in which the protein is removed by metaphosphoric acid and the nitrogen determined colorimetrically in the filtrate by direct Nesslerization after oxidation by a mixture of sulphuric and phosphoric acids.

Total nitrogen determinations of the urine were made by the usual Kjeldahl method, the only modification being the use of alizarin red as an indicator in the final titrations.

Urea nitrogen of the blood was determined by the urease method of Marshall as modified by Van Slyke and Cullen. Two c.c. of blood were used for each determination and 2-3 drops of caprylic alcohol: 0.5-1-5 c.c. of amyl alcohol were used to prevent foaming. "Arlco" urease was used in powdered form in all studies. Ammonia was collected in N/100 sulphuric acid, and titrated with N/100 sodium hydroxide, using methyl red as indicator.

Urea nitrogen of the urine was determined by the urease method of Van Slyke and Cullen, the same as in blood.

In all urea determinations a blank was run simultaneously with each determination.

Ammonia nitrogen from the urine was determined by the method of Folin and Bell in which "Permutit" is used to remove ammonia from the urine and the amount determined colorimetrically after Nesslerization.

Blood plasma chlorides were determined by the method described by Harding for the determination of chlorides in body fluids. Proteins in 2 c.c. of hemolyzed plasma were precipitated by the use of 2 c.c. of 7 per cent. copper sulphate and 8 c.c. N/50 sodium hydroxide with the addition of heat. The chloride in an aliquot portion of the filtrate was determined by the method of MacLean and Van Slyke, the only change from the original method being the use of magnesium sulphate to facilitate the precipitation of silver chloride as suggested by Harding.

Urine chlorides were determined by the Volhard-Harvey Method.

Plasma acidity (carbon dioxide combining power of the plasma) when made was determined by the Van Slyke method.

Blood sugar determinations were made by the method of Lewis and Benedict. Paraffin was used instead of mineral oil to prohibit foaming during evaporation. This method checked with that described and the paraffin was removed by subsequent filtration.

In all cases frequent blanks were run on reagents and all determinations were the average of closely agreeing duplicates.

So much for the purpose and methods used. The following protocols will serve to illustrate the results of studies before and at varying periods subsequent to corrective measures.

Case 28—Male, 59. Diagnosis: Chronic nephritis with hypertension; chronic infectious alveolar abscess; cerebral arterio sclerosis. On admission: B.P. S. 184, D. 140, rate 72-80. Blood culture: Diphtheroid. Tonsil culture: Strept. mucosus, diphtheriod and an unclass-bacillus. Urine: Trace of albumin, hyaline casts.

Phth.—First hour	100 c.c.	35%
Second hour	150 c.c.	40%
	250 c.c.	75%

Total blood N	40.5 mgm. per 100 c.c.
Urea N	17 " " " "
Urea index	65
Nacl index	5.88 calculated 6.20 found

Dental condition corrected and thirty days later tonsil enucleation; strept. mucosus and diphtheroid recovered from tonsils. Ocular examination showed mild sclerosis. One month later:

B.P. S. 160, D. 98, rate 76.

Phth.—First hour	300 c.c.	27%
Second hour	75 c.c.	23%
	375 c.c.	50%

Urine: Albumin Neg., few hyaline casts.

Readmission four and one-half months later. B.P. S. 152, D. 100, rate 88.

Phth.—First hour	180 c.c.	23%
Second hour	240 c.c.	38.5%
	420 c.c.	61.5%

Total blood N	32 mgm. per 100 c.c.
Urea N	16 " " " "
Urea index	72

Patient had gained in weight, moderately active in business, incordination corrected.

Case 29—Female, 52. Diagnosis: Chronic nephritis with hypertension; chronic tonsilar and alveolar infection; duodenal ulcer with duodeno-colicystic adhesions; chronic appendicitis with ileo-cecal and pericolonic adhesions; latent hyperthyroidism. On admission: B.P. S. 210, D. 130, rate 86. Blood culture, diphtheroid.

Phth.—First hour	40 c.c.	trace
Second hour	375 c.c.	32.7%
	415 c.c.	32.7%

Urine: Albumen, granular and hyaline casts.

Total blood N	52 mgm. per 100 c.c.
Urea N	27.6 " " " "
Urea index	54

Between October, 1916, and January, 1917, inclusive, all teeth were removed and tonsils enucleated. The latter were cultured after removal, a strept. mitis and a diphtheroid being recovered. Four weeks later a single blood culture remained sterile. She gained in weight but continued to have recurrent attacks of ketonuria associated by showers of casts. Abdominal section confirmed clinical diagnosis. She was discharged January 22, 1917, with B.P. S. 180, D. 104, rate 80.

Phth.—First hour	425 c.c.	29.4%
Second hour	200 c.c.	28%
	625 c.c.	57.4%

Total blood N	32 mgm. per 100 c.c.
Urea N	18.2 " " " "
Urea index	123
Nacl index	5.97 calculated 6.6 found

Patient has been driving her own car and active for the first in seven years. Readmission March, 1918. Complains of attacks of fatigue and nervousness. Variations in weight without definite loss. Goetsch test positive. B.P. S. 148, D. 100, rate 100.

Phth.—First hour	148 c.c.	27.2%
Second hour	175 c.c.	19.6%
	323 c.c.	46.8%

Urine showed trace of albumen, but otherwise was negative.

Case 50—Female, 43. Diagnosis: Chronic alveolar and tonsilar infection; pericolonic and retro-ileal adhesions, appendicial in origin; chronic nephritis with hypertension. On admission: B.P. S. 172, D. 104, rate 98.

Phth.—First hour	78 c.c.	trace
Second hour	500 c.c.	42.5%
	578 c.c.	42.5%

Total blood N	61.8 mgm. per 100 c.c.
Urea N	31 " " " "
Urea index	52

Blood culture: Negative. Dental pathology corrected and admitted four months later, having gained two and one-half pounds in weight and feeling as though she should be working. B.P. S. 166, D. 104, rate 86. Four weeks later: B.P. S. 165, D. 100, rate 65. Abdominal section was made. During April, 1917, seven months after the first admission, the following was found: B.P. S. 160, D. 100, rate 88.

Total blood N	32 mgm. per 100 c.c.	
Urea N	14.5 “ “ “ “	
Urea index	55	
Nacl index	5.8 calculated 6.1 found	
Phth.—First hour	115 c.c.	8.7%
Second hour	310 c.c.	44.6%
	425 c.c.	53.3%

Readmission five months later, i.e., at the end of one year. B.P. S. 154, D. 100, rate 88.

Total blood N	28.4 mgm. per 100 c.c.	
Urea N	11 “ “ “ “	
Urea index	57	
Phth.—First hour	150 c.c.	38%
Second hour	204 c.c.	18%
	354 c.c.	56%

A typical record is that of Case 59, female, 52. Admission February 22, B.P. S. 200, D. 188, rate 90. Very much disoriented, fatigued, and restless. Blood cultures sterile; complement deviations negative; tonsils show evidence of chronic infections; onset of present condition evidently slow and insidious. Laboratory notes of February 26 show:

Urine—

Sp. Gr.—1006.
Reactive—Neutral.
Albumen and casts.

Total N	2.728 gm. per L.
Urea N	2.39 “ “ “
N.H.$_3$ N	0.088 “ “ “
Nacl	1.38 “ “ “

Blood—

Total N	36.5 mgm. per 100 c.c.	
Urea N	14.0 “ “ “ “	
Nacl	625.0 “ “ “ “	
Urea index	105	
Nacl index	5.81 calculated 6.25 found	
Phth.—First hour	270 c.c.	27.85%
Second hour	130 c.c.	33.40%
Third hour	50 c.c.	8.63%
Fourth hour	40 c.c.	3.45%
	490 c.c.	73.33%

Tonsil enucleation March 7. Restudied March 26.

Urine—

Sp. Gr. 1010.
Reaction acid.

Total N	4.56 gm. per L.
Urea N	3.825 “ “ “
N.H.$_3$ N	0.115 “ “ “
Nacl	3.22 “ “ “

Blood—

Total N	22.1 mgm. per 100 c.c.
Urea N	11.05 “ “ “ “
Nacl	613 “ “ “ “
Urea index	130
Nacl index	5.83 calculated 6.13 found

Weight—

Lost four pounds following tonsillectomy, then gained a total of nine pounds to April 1.

Of 342 cases of nephritis presented, sixty were studied by the methods noted. Of the sixty, forty-seven submitted to corrective measures as advised and were subsequently restudied. The longest period of observation was two years and the shortest twenty-six days following corrective measures.

Correspondence with the home physician of the group secured replies from the majority of either home physician or patient and in a few instances from both. Of the twenty-three uncorrected, three have died from nephritis, sixteen report advance of disease or no improvement; four were not noted.

Of the forty-seven cases submitting to correction measures, nine have not been noted, six report little or no change, and thirty are "much improved" or "apparently as good as ever." The latter quotation appeared frequently enough to be used as a general statement.

Summary—A group of nephritics in whom no other etiological factor except bacterial toxins form chronic foci were studied by recognized renal functional tests under controlled diet, both before and after removal of discoverable foci. Culture studies showed a streptococcus mucosus as the principal pathogen. Other bacterial forms, in order of frequency, were a diphtheroid, B. mitis, S. candidus, S. viridans and pneumococcus (not typed) of forty-seven cases restudied. Thirty-six reported prior to presentation of this paper. Of these thirty were improved and had resumed normal modes of living. Of twenty-three cases not "corrected," nineteen were reported, three having died and sixteen showing "advance disease."

The work in chemistry was carried out personally by Mr. Roger S. Hubbard, formerly assistant in the Department of Chemistry, Washington University; that in bacteriology by Mrs. C. Brogden, formerly of the University of Pennsylvania. To these and to Dr. M. S. Woodbury,

I express appreciation. The management of diets and the clinical technical work was entirely under the direction of Miss Lillian Bradley, to whose assistance I am indebted in the painful details of such work, requiring as it does both tact and patience.

THE DIAGNOSIS OF NEPHRITIS*

By DR. ALBERT A. EPSTEIN.
NEW YORK CITY.

It is a very ambitious undertaking to discuss adequately the diagnosis of nephritis. The subject is old and yet a very perplexing one.

Our knowledge of nephritis has gone through several stages of development: the clinical, the pathological, the experimental, and the functional. Much information has resulted from this development and a vast literature exists on nearly every phase of the subject. When albumin and casts were the basic signs of renal disease, the conception of nephritis was much simpler than it is to-day. The confusion which has arisen from the efforts of pathologists and clinicians to get a closer insight into the morbid processes of the kidney, has not been much lessened by more recent advances in our knowledge. It is not at all strange therefore that in a symposium on nephritis the question of diagnosis should again be discussed, at least, in some of its newer aspects.

By virtue of the scientific development in this field of medicine a proper understanding of nephritis now requires a foreknowledge of pathology, physiology, chemistry, and general clinical medicine. Without such knowledge, renal diagnosis is very perplexing, because of the difficulty in correlating the information which we gather by the different methods of investigation.

Pathology has taught us the various forms which disease of the kidneys may assume, and established their relationship to diseased processes in other parts of the body. But the pathological concept alone as a criterion for renal diagnosis is no longer adequate, owing to its frequent failure to correspond with clinical manifestations and urinary signs. Similarly from experimental procedures on animals, we have learned much concerning the intimate relationship between pathological changes and functional activity of the kidneys. The unqualified applications of this knowledge, however, to the clinical diagnosis of nephritis, is also impossible for the reason that the conditions under which nephritis is produced experimentally and those under which it arises clinically, are not comparable. I have in mind particularly the work of Schlayer and his pupils, in which an attempt is made to establish rules for diagnosis for the different forms of nephritis upon the basis of functional reactions of the kidneys to different chemical re-agents.

The place which renal function tests now occupy in our diagnostic armamentarium is a very important one; the information which such tests yield, however, is often inconsistent and misleading, for the reason that the position of the kidney in the animal economy is such that alterations in renal function may arise from causes outside the kidney. We shall go into this question more specifically, when I discuss the relation of some types of renal disease and other clinical conditions to disorders of renal function.

I do not intend to minimize the importance of each method of procedure in the diagnosis of nephritis, nor do I mean to suggest that the various means at our disposal do not contribute necessary information to the final diagnosis. The purpose of these remarks is merely to emphasize the fact that our view of nephritis must be comprehensive—and that we cannot rely on any single method of investigation for the proper understanding of abnormal kidney conditions.

On the basis of our present knowledge the diagnosis of nephritis is confronted with two distinct problems. First, the determination of the pathologic processes involved; and secondly, the evaluation of the kidney function. An accurate diagnosis of nephritis therefore entails a circumspect and complete analysis of all the morbid conditions present: the probable etiologic factors involved, the disturbance in functions and other disorders which arise therefrom. To regard nephritis as an independent condition is a fallacy.

Although the anatomical classification of kidney disease is not adequate in all cases, we must rely upon this method for guidance. To be sure the etiologic classification attempted by Mueller is helpful, but the functional classification as proposed by Schlayer is still impractical.

The types of nephritis which first require our attention are the acute forms, namely, the acute glomerulonephritis, the acute non-suppurative interstitial nephritis, and the acute tubular nephritis or nephrosis. They often constitute the forerunners of the contracted kidney or the large white kidney.

The problem in the diagnosis of acute nephritis is essentially different from that of chronic nephritis. In acute nephritis we have to deal with acute damage to normally functioning organs, which previously sound, are again more or less quickly restored to normal, provided they are not overwhelmed with the destructive agent. In the diagnosis of acute nephritis or subacute nephritis, a consideration of the etiologic factors involved is very important: they are usually bacteria or their toxins, or, as I believe to be the case with certain subacute types, constitutional disorders of metabolic or endocrine origin.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 21, 1918.

The intimate connection between infective conditions and nephritis is very well known. In acute nephritis due to the action of bacterial toxins, the renal reaction is a diffuse inflammatory process. The onset is rapid and the signs are unmistakable. Occasionally nephritis may result from actual lodgment of bacteria in the kidney substance (bacterial thrombi), giving rise in consequence to a disseminated focal type of lesion of which a good example is the embolic glomerulonephritis of subacute bacterial endocarditis. The diagnosis frequently depends on the recognition of the original disease. In the more fulminating types of general infections, such as those of postpartum sepsis, or suppurative sinus thrombosis, cocci may appear in the urine associated with blood elements, pus, and granular casts. The diagnosis in such cases is self-evident. I need not discuss the clinical features of each of the acute forms. They are well known.

The existence of acute nephritis, excepting of course the chemical nephritides, and the types occurring in pregnancy, therefore points usually to an antecedent infection. But renal disorders with urinary signs frequently occur in febrile diseases of all kinds, which do not represent true nephritis, and thus the problem of differentiation often arises. In this latter group of cases of course the signs usually are not so pronounced. There is an albuminuria (at times with casts.) Functional disorders, as we shall see later, also arise. But there is not, as a rule, that marked evidence of renal involvement such as we find in the true cases of nephritis; nor does the disturbance last much beyond the duration of the febrile state. The difference perhaps is arbitrary, and one of degree only.

However, the tendency of uncomplicated acute nephritis is also to recovery, provided, of course, infective factors be no longer present and active, to work new damage to the kidney. This is well shown in clinical experience by the complete disappearance of the nephritis of scarlet fever cases.

In persistent or recurring infections the condition may go on to chronicity. Present day experience with infected tonsils and sinsuses as well as infections about the teeth may account for many such instances. Many cases of chronic nephritis apparently following the acute lesions have been reported, and an antecedent scarlet fever, no matter how far removed, must be regarded as an important historical fact in the diagnosis.

In the matter of chronic nephritis, the problem of etiology as a source of information is much more difficult. No doubt in a certain number of cases a history of acute nephritis or recurring infections may be elicited, and a diagnosis arrived at, but the connection between the two is not always clear. Chronic poisoning, tuberculosis, or syphilis may be contributory factors, and require consideration in the diagnosis. There is one difficulty that presents itself from the clinical side in investigating the question of the connection between acute, subacute, and chronic nephritis, and that is, as already intimated, that acute and subacute nephritis may appear without the development of symptoms other than the urinary signs, during any infection. Furthermore, in the chronic nephropathies it is the possibility and the frequent occurrence of compensatory processes that create difficulty in arriving at a diagnosis. This is particularly true when the question is viewed from the functional standpoint.

Notwithstanding the efforts of pathologists and others, the diagnosis of chronic nephritis still is, as it has been in the past, largely conventional. In this respect I know of no better guide than the manual of Volhard and Fahr. While a correct anatomical diagnosis is always desirable, it is not always of especial importance, except in such cases where a differentiation is necessary between the factors due to renal disease, and those due to disease in other organs. Our aim in diagnosis to-day is not merely to establish the pathological character of the disease, but to ascertain the facts which are vital in the treatment.

Chronic nephritis presents a great variety of symptom combinations. Certain clinical types occur with such regularity, that definite rules may be established for their recognition. Thus Widal groups chronic nephritides into two general classes: (1) the azotemic to which belong the chronic interstitial forms—primary and secondary, in which retention of nitrogenous waste products in the blood occurs, leading to and terminating in uremia; (2) the hydropigenous—to which belong the chronic parenchymatous forms, which are characterized by the retention of water and salt, and the development of edema. Nevertheless in certain cases the clinician finds himself embarrassed, when it comes to appraising the relative value of the heart, the blood vessels, and the kidneys, in the production of some of the symptoms.

Albuminuria, with or without casts, is still the cardinal point about which all questions of renal diagnosis revolve. Given a case with albumin in the urine, the answer must be given whether it portends a nephritis. Is it the expression of a definite renal lesion, or some other disorder? Inquiry must be made into the history for evidences of infection, or intoxication, by drugs and other agents, syphilis, recent pregnancy, etc.—to establish if possible a traceable etiology. The discovery of an etiological factor does not necessarily determine the diagnosis of nephritis, but it furnishes good presumptive evidence.

In children the problem frequently arises of the differentiation of postural albuminuria. This is a common contingency, and the presence of a marked albuminuria, without casts or with rare casts, in a child should always suggest the possibility of its being this peculiar type. We know that testing the separate urines passed at different times of day and the effect of standing fifteen to thirty minutes in lordotic position, will often clear up the diagnosis promptly. The large amount of protein precipitable by acetic acid in the cold is an important feature of the albuminous urine in these cases. A similar chemical reaction, however, is frequently obtained in the albuminuria which occurs in association with glycosuria in diabetes. Other evidences of renal disease in these cases may be entirely wanting, but the albuminuria does not seem to be of postural origin.

Aside from these and the other group, there is a large number of patients in whom no assignable cause for the albuminuria can be found. Local causes in the urinary tract may be responsible for the albuminuria (stones, tumors and other conditions). These conditions, of course, should be excluded.

Although our knowledge in this matter is not complete, we know that certain anatomic peculiarities in diseased kidneys are characteristic of different operating causes. So that etiology may not only aid us in determining the presence of renal disease, when the cause of the albuminuria is established, but also in devining the exact nature of the trouble.

If we wish to gather all possible clinical data we will not rest content with historical facts, nor with an anatomical diagnosis of nephritis, but will proceed to determine the degree to which the kidney function has suffered.

The functional methods of renal diagnosis, generally speaking, are divisible into two groups. (1) Those which aim to ascertain the character and extent of renal disease by estimating the response of the kidneys to physiological and other specially selected stimuli. (2) The other aims to determine the nature and degree of the damage, arising from the insufficiency of the kidneys.

To the first group belong those tests which depend on the excretion of substances administered in known quantity, which are recoverable more or less completely from the urine. Schlayer adopted the excretion of water and lactose as indicators of glomerular activity and of sodium chloride and potassium iodide as a measure of tubular function. By using these substances as tests, Schlayer claims to be able to distinguish certain types of nephritis, there being a close agreement between the excretion of these sub[illegible]ances and the respective types of renal involve[illegible]t. According to Schlayer, vascular (glome[illegible]nephritis, whether acute or chronic, is [illegible]d by delayed excretion, and by oliguria or polyuria according to the sensitiveness of the renal vessels, and by normal sodium chloride and potassium iodide excretion. All grades of mixed functional disturbances were found between these two extremes. As stated before, Schlayer went so far as to submit a classification of nephritis based on the reaction of these tests. These conclusions are founded on the assumption that we can test the individual function of the kidneys, and presupposes a much more definite knowledge of the physiology of that organ than we in fact possess. So far as practical conclusions are to be drawn, the weight of evidence points to the view that these tests do not furnish sufficient ground for an anotomical diagnosis of nephritis. We must rely upon the other and better known data for that—such as the character and composition of the urine, the presence or absence of edema, of hypertension, eye changes and cardiovascular changes.

Prompted by his observations, Schlayer, in conjunction with Hedinger, devised a diet by means of which he had hoped to ascertain the exact function of the kidneys. In work along similar lines, Mosenthal adapted and amplified this diet, with the object of determining in a relatively brief space of time, the total functional activity of the kidneys. This work is well known to you and needs no further discussion. Its greatest service, I believe, is in the observation made of the increased nocturnal diuresis, and the fixation of specific gravity, which constitute perhaps the most constant phenomena in renal disease.

Of the tests for estimating the general excretory capacity of the kidneys, the best known is the phenolsulphonaphthalein. While in mild or moderate grades of nephritis, the amount of this dye which may be recovered from the urine may be normal or nearly so, in the severe forms the amount is very much reduced. In cardiovascular diseases where the heart is failing and the kidneys are passively engorged, a low phthalein output is observed. This output rises as the heart action improves and the venous engorgement subsides. On the other hand, a low excretory capacity for this dye, persisting after clinical evidence of cardiac improvement, points to the presence of a definite nephritis.

The matter, however, is not as simple as that. Many considerations render the study of renal function a very complex problem. It is a mistake to regard any one functional test as being capable of measuring renal function as a whole, as each test at best, covers only a limited range of the kidney activities.

It is for this reason more than any other that another group of functional tests—namely, those which aim to determine the nature and degree of damage arising from disease of the kidneys, have come into being. The normal function of the kidney comprises the elimination, amongst other things, of the waste products of nitrogenous metabolism. Failure on the part of the kidneys to functionate properly causes a retention of these substances in the body and their accumulation in the blood. The tests measure one or another of these substances—all of which come under the heading of incoagulable or non-protein nitrogen. The level of the non-protein nitrogen in the blood must be determined as the resultant of at least three (3) factors—kidney efficiency, diet and protein destruction. In appraising the kidney function on this basis, due credit must be given to each of these factors. One other factor (usually ignored) is of the greatest importance, and that is the fact, that in renal conditions associated with edema, much of the retained nitrogenous waste products are distributed throughout the body in the retained fluid, so that the blood does not show the same concentration that it would, had there been no edema. It is not uncommon to find in such cases that the non-protein nitrogen in the blood increases as the edema subsides.

Certain investigators lay the greatest stress on accumulation of urea in the blood. Chace and Myers believe that uric acid and creatinin give the earliest and best indication of renal incompetency and disease. Further extensive experience obtained under uniform conditions, will show whether or not any one single substance can give the best evidence of impaired renal function. For my part, I believe that the non-protein nitrogen as a whole or its one component urea, gives the best indication of renal disease. In the absence of edema, a persistently low non-protein nitrogen or urea in the blood, even when urinary signs, such as albumen are present, speaks against true renal disease.

In the application of functional tests in the diagnosis of nephritis, two points must be borne in mind: namely, that a number of the different functional tests should be made, and that they should be repeated in each and every case. As a prerequisite to the proper interpretation of the results obtained by function tests, extrarenal factors which are capable of modifying or influencing them, should be definitely excluded. The reasons for this precaution are manifold.

It is generally known that cardiac insufficiency may give urinary signs like those of renal disease. And functional tests, as already stated, may also yield evidence to that effect. Following febrile conditions, renal function may remain disturbed for some time after the fever has subsided. Christian has pointed out that in severe or pernicious anemias, both the phenolsulphonaphthalein test and the renal test meal may give results like those obtained in severe nephritis.

There is one group of cases in which the renal function is extremely deranged, and yet the cause of the disturbance rests outside the kidney. I refer here to the type of subacute or chronic nephrosis, with marked water and salt retention. This is the type that occurs during or after a pregnancy, or arises spontaneously both in the male and the female, without any traceable cause. It is characterized clinically by an oliguria and intense albuminuria. The urine is free from blood elements and the blood pressure is not elevated. Cases are occasionally encountered in which the blood pressure *is* elevated; these occur more commonly in relatively young women, associated with a disturbance or a cessation of the menses. Other clinical features which characterize some of these cases are the pronounced loss of hair, change in the color of the skin (particularly of the face), exophthalmos, and in some, enlargement of the thyroid.

I have shown on one or two previous occasions, that many, if not all, of these cases constitute a group in which the underlying disturbance is of a metabolic or endocrine nature. The oliguria with its associated retention of water and salt is the expression of a disorder in the blood, and the kidneys have little or no part in it. Evidence is accumulating which supports my views in this matter.

It is important to recognize this disease because it is amenable to treatment; but in a way, totally different from that heretofore practiced. Although the clinical features of this group of cases are very striking, there are others which are even more characteristic. These are to be found in the blood and also in the edema fluid. The principal changes occur in the proteins and the lipoids of the blood serum. The proteins become very much reduced in amount, with a percentile predominance of the globulin fraction. The lipoid content is very much increased, often assuming such proportions as are rarely encountered in the severest form of diabetes.

Heretofore, in the diagnosis of renal disorders, interest centered about the non-protein nitrogen of the blood. In the group of cases just described, the most marked changes occur in the other constituents. I have some evidence on hand which indicates that examination of the blood for lipoids may constitute a very important accessory in the diagnosis of renal diseases, more especially in establishing an early differentiation of the albuminurias of pregnancy; those which do, and those which do not lead to eclampsia. Such determinations often give also definite evidence of impending uremia.

The edema fluid, which is encountered in the group of cases just described, has a characteristic chemical composition. It consists almost exclusively of water and salts (organic and inorganic) and contains only traces of proteins; almost all of which is globulin. This is totally unlike the composition of edema fluid occurring in cardiac or obstructive conditions.

SUMMARY: Nephritis is rarely an isolated or independent condition. The accurate diagnosis of nephritis involves the consideration of many different factors which enter into the production of its clinical manifestation. Improved methods of investigation permit us to get a much more comprehensive analysis of the disease and enable us to understand its many and variable features. Reliance should not be placed on any one method of analysis or investigation—all of them should be used to attain the one end—namely, a proper diagnosis.

Attention is called particularly to the heretofore unrecognized importance of changes in the protein and lipoid composition of the blood, as a means of diagnosis of certain types of renal disorders.

THE TREATMENT OF CHRONIC NEPHRITIS.*

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IN the treatment of chronic kidney disease, the physician encounters three distinct clinical problems, each demanding quite different therapeutic measures. The classification of kidney disease on the basis of anatomical lesions is both confusing and unsatisfactory in the application of treatment. It is much more helpful to approach the problem from the standpoint of disturbed physiology, the method of which will be followed in this paper.

The most common type of kidney disease seen is that of the middle aged adult who complains of some or all of the following symptoms, tiring easily, occipital headache, shortness of breath, high blood pressure, and little or no physical evidence of kidney disturbance except frequent and excessive urination at night. The blood is commonly low in urea, creatinin, and phosphates, the blood sugar may be high. Edema is usually not present. Death is rarely caused by uremia, rather by cerebral hemorrhage or failing heart. This is the well-known cardio-renal type.

The next most frequently seen type is the middle aged or even younger adult who may have pronounced eye symptoms, edema, low or high blood pressure, very little kidney reserve, urine loaded with albumen and casts, blood containing two or three times the normal amount of urea, a high blood sugar, increased blood creatinin and phosphate retention. Death is commonly preceded by convulsions and the phenomena of uremia.

The last and much less frequently seen type is that of the young or middle aged adult who complains chiefly of edema, weakness, pallor, and marked albumenuria. Blood urea and sugar will be found low, perhaps lower than normal. The cholesterin content of the blood may be greatly increased. The edema may or may not be influenced by the salt content of the diet. The functional capacity of the kidney is fairly normal to the usual clinical tests. The patient suffers very little headache or from the other symptoms commonly seen in kidney failure. When death occurs, it usually results from exhaustion and not from intoxication; it would seem, however, that many patients recover.

With these distinct clinical types of kidney disease in mind, we may proceed to considerations of treatment.

The first and one of the most important steps in the treatment of any type of kidney disease is to rid the body, whenever practicable, of all focal infections. There can be no doubt that the continued absorption of toxins from bacteria of low grade has a deleterious influence upon the kidneys and vascular system and indeed may bear a causal relation to kidney disease. The importance of investigating suspicious tonsils, crowned teeth, and diseased prostates cannot be over emphasized.

In the treatment of the cardio-renal type, after one has made sure that the patient is not harboring infection, the most important measure is rest, rest both mental and physical. The patient should get up late in the morning, retire early at night, and recline a good share of the day. If the patient has a good functional kidney capacity, he should be put on a low general simple diet. All chemical irritants in the way of spices, mineral acids, alcohol, and foods containing large quantities of animal extractives, bacteria and bacterial products should be excluded from the diet. The patient should be allowed to have some meat and eggs. An adult weighing 150 pounds or thereabouts should not eat more than 1,800 or 2,000 calories of food. Many patients do better on even less than these amounts. The diet should contain plenty of green vegetables and they should be cooked by steam rather than by boiling that their mineral content may be retained. I have often seen this regime when continued for from three to six weeks lower both systolic and diastolic pressures from 10 to 40 mm. I have sometimes thought small doses of iodine to be helpful and usually give it in from 3 to 5 drop doses freely diluted at each meal. The rest of the treatment is purely symptomatic. If the patient is constipated, a mild saline or a vegetable purgative should be given in the morning. Headache is often relieved by the application of heat or cold. When the patient is discharged, he is advised to continue to live on the low metabolic plane which characterizes the treatment. I have seen no permanent benefit come to cardio-renal patients from the use of electricity, diuretics, sweating baths, saline purgatives, or the use of the multitudinous remedies which have been advocated to stave off the arteriosclerotic process. The treatment may be thus summed up in getting rid of all focal infections, plenty of mental and physical rest, and a low simple general diet.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 21, 1918.

The second clinical type herein discussed characterized by blood nitrogen retention, high or low blood pressure, edema, albumenuria, etc., demands quite a different therapeutic regime than does the cardio-renal type. In severe cases, perhaps the best initial measure is to put the patient at rest and give him the limited milk and fluid diet first suggested by Karrel. In our clinic, we prescribe daily for the first few days one quart of milk, one pint of water, and another pint of lime water or some salt of calcium, either the carbonate or lactate in half dram doses several times daily. Tincture of iron or ferrous carbonate in liberal doses is also given. John Howland has shown that lime and iron both facilitate the elimination of phosphates, the retention of which, according to this investigator, causes the acidosis and death in this type of nephritis. Our clinical and laboratory experience confirms this view of Howland. After 4 to 8 days of this treatment, we cautiously add orange juice, cereals, green vegetables, and raisins. If evidences of nitrogen retention in the blood lessen, the diet becomes more liberal and general. If edema disappears, water is more freely allowed. If the albumen outgo in the urine is excessiye, the cautious addition of protein to the diet may be attempted. The most important step in the treatment of a serious case of this type of kidney disease, after having rid the patient of all infections, is to reduce his general plane of diet. Nephritics of this class are much like diabetics in that they seem to have very limited and definite powers of metabolism. They are stronger and do better when living on a low metabolic plane.

Death in this type is due to uremia with coma or convulsions. In the terminal stage, hot packs and diuretics are supposed to have value. In my experience they are worthless. I have recently tried both hot packs and diuretics on three cases which terminated fatally. In each instance the only effect was to produce exhaustion. Much greater amelioration of symptoms was obtained by the hypodermic use of morphine. A much more satisfactory plan which we are now using in the uremic stage is to give the patient very little food, not more than 20 to 30 ounces of milk daily, from 2 to 6 drams of calcium carbonate or a pint of lime water in addition and but very little water. A light saline purge is given in the morning; headache is controlled by an icebag, and extreme restlessness by morphine. Bleeding is sometimes of distinct value. In the treatment of advanced cases, much valuable aid may be had from blood chemical studies. Whenever possible, a severe nephritic should be treated in a hospital equipped to scientifically interpret the phenomena of the disease, otherwise treatment must be more or less conjectural.

The third and least common type of chronic kidney disease is the one brought into prominence by the writings of Epstein and is designated as a nephrosis suggesting a degenerative process rather than one of inflammation. Its chief characteristic is edema. It should be borne in mind that these cases suffer much from the loss of nutrients in the albumen which escapes in the urine. In the cases which I have seen, there is nothing to suggest the intoxication which accompanies diffuse parenchymatous nephritis which has just been discussed and the treatment accordingly is quite different. The diet should be much more liberal and should contain a large amount of protein. As many as 8 to 10 ounces of meat may be very helpful. Fluids should be restricted. I have tried Epstein's plan of keeping the carbohydrates and fat low in order that protein metabolism may be stimulated. In selected cases, it works admirably. Some way should be found to measure the salt intake in the food and its outgo in the urine. If there is evidence of salt retention, its use should be curtailed, otherwise it may be sparingly permitted. Before employing this dietary measure, one should be sure that the patient has a normal or even low blood nitrogen. Frequent blood chemical tests should be made during the treatment to be sure that there is normal disposal of urea. I know of no medicines which do good except possibly iron.

Nephritis in actual practice is not quite as stereotyped as might be inferred from this paper. Oftentimes one sees cases presenting the phenomena of more than one type and this obviously suggests a modification of the plans herein outlined. These conditions must be met along the lines indicated with the physiological chemical studies of the blood and urine as guides.

Discussion.

Dr. Charles G. Stockton, Buffalo: I heard only the latter part of Dr. Hunt's paper, but I feel from what I heard and from his conclusions, that he has given us today what stands as the last word in the conception of the etiology and of the proper management of nephritic cases. I don't know just how carefully or how radically he classified his cases of nephritis, but it doesn't seem to me that this makes very much difference, because as we see these cases, they are either primarily from infection alone, or from the mixture of infection and metabolic defection, and in the management of the cases it is up to us to get rid of the infection and to correct the metabolic defection, and overcome the injury caused by infection.

I feel that this is a most important paper, that this view of nephritis ought to be very thoroughly appreciated, and by carrying out regular methods such as Dr. Hunt has described, it is surprising to find how much benefit may come in some apparently hopeless cases.

I have seen rather acute types of nephritis with marked retentive disturbances following infection, and within a few weeks producing anasarca, amblyopia, and other symptoms of a grave character, and I have seen these disappear without any apparent defect remaining in the kidney. I have in mind particularly one woman who has since gone safely through gestations without any symptoms whatever, apparently a perfectly normal woman, who at one time seemed to be a hopeless nephritic. In her case, I feel convinced that the reason of relief was removing of the tonsils and subsequently the very careful regulation of diet, according to the study of the blood.

Joseph R. Wiseman, Syracuse: The work that Dr. Hunt has done in attempting to find a cause for chronic nephritis is indeed interesting. I have often talked with him about it and am familiar with some phases of his work. I believe that he is particularly to be praised for attempting to find out in advance whether a particular tonsil is apt to be the cause of the symptoms, or whether it may not be a coincidence. He has a technique for painting the tonsil with iodine, asperating the tonsillar contents, and making a direct culture. The presence of virulent organisms in the culture may indicate that the tonsil is dangerous.

In the cases he reports, he undoubtedly has achieved a number of very splendid results, but I think that most of us in practice have often been disappointed after removing infectious foci that looked like etiological factors. Often we see a patient with nephritis and the tonsils appear definitely diseased, but even when they are removed, no improvement follows. It would seem as if the profession today were a bit over-enthusiastic about the question of focal infection and it must be that there are a good many other factors which we don't know much about yet. The question as to the removal of tonsils is a very difficult one. It seems to me that a normal tonsil is a rather rare condition. Some degree of tonsillar disturbance is present in most adults, and to estimate in advance whether it is going to help a particular patient to remove a tonsil that appears abnormal, or whether it had better be left alone, is really in many cases a matter of luck. We may have a brilliant result, but on the other hand the operation may confer no benefits.

Dr. Arthur F. Chace, New York: I was very much interested at the end of the session of the American Medical Association last year when several of the doctors in the lobby said that Dr. Epstein and I disagreed about the treatment of nephritis.

Dr. Epstein has just read a paper advocating large a protein diet. I advocate a very low protein diet. I was quite surprised because there has been no disagreement at all. We both give high protein diet in parenchymatous nephritis and a low protein diet in interstitial nephritis.

And I think since Dr. Williams' very able discussion of the treatment, it shows that we agree in that in these kinds of nephritis we all agree in giving a very much larger protein diet than was formerly given, and our experience has conformed to Dr. Epstein's experience, that in those cases we overcome the weakness by giving them large amounts of egg and milk. That is a radical change in the treatment of parenchymatous nephritis.

I have also been surprised to find how few cases we actually come in contact with of pure parenchymatous nephritis.

I think Dr. Epstein agrees and we all agree that in the interstitial type of nephritis, where there is tremendous retention of nitrogen in the blood we give a protein diet as low as we can, and at the same time maintain body strength. I think there has been a little bit of change perhaps in the treatment of diabetes, as well as in the treatment of nephritis. I think we should not give too low a diet, and I believe some of us have our eyes so fixed upon the disease that we sometimes forget the patient. I think perhaps that we have swung a little bit too far in our efforts for the quick eradication of sugar in the urine, and for that reason perhaps, I don't quite agree with Dr. Williams in giving too low a diet, because I think we must after all consider the patient's body strength. I think there is a distinct advantage in attaching importance to the mineral salts in these cases. The average patient should take a much larger vegetable diet, which supplies an ample amount of mineral salts in the right proportion, to overcome the tremendous tendency to inanition, which you are apt to have in these cases.

Now the reason that the general practitioner didn't give a heavy vegetable diet in nephritis was simply because the patient wouldn't take it. The average patient is nauseated, and it is useless to advise him to take spinach, string beans, carrots, potatoes, or bananas. Now the point is he will take vegetables if they are thoroughly cooked and served in small portions, and that is the essence of the whole matter. You can give a nauseated patient vegetables if they are cooked well and thoroughly mashed. In that way we are able to use a large variety of vegetables and cooked fruit by paying more attention to their preparation.

I am thoroughly in sympathy with giving calcium in adequate quantities to eliminate the phosphate, because we find in many cases the patients die of acidosis, and we know that in these types of nephritis the kidney eliminates acid phosphate with a great deal of difficulty, and these phosphates can be eliminated more easily by giving an adequate amount of calcium. I think it is very important to avoid the acidosis in these cases. I think the work of Dr. Epstein is a very important addition to our subject, an addition which has been more emphasized in the past year than it has been heretofore and it has been made possible by perfected laboratory methods.

One point about hot packs: It will do two things. It will get rid of salt and water, but not nitrogen, and if a patient has much salt and water in the tissue, I believe in hot packs to get rid of it. If he simply suffers from nitrogen retention, I agree with Dr. Williams that there is no use of depleting his strength by giving him sweat packs.

Dr. Allen A. Jones, Buffalo: In discussing the pathology of the subject on the program today we must bear in mind the changes which occur in the kidney in cases we classify clinically as purely interstitial, purely cardio-renal, or wholly parenchymatous nephritis. Indeed, a clear cut case is rather the exception than the rule, pathologically. Some years ago before we fully understood the sequence in pathologic changes, we were apt to disregard the glomerular element in chronic nephritis and to look upon it primarily and from the start as an interstitial process. Now we know that interstitial changes follow cellular changes in the glomeruli, and we have really a destruction of many glomeruli before a large and abundant new interstitial formation occurs.

Another thing which was called to our attention a good many years ago by the pathological workers was the fact that kidneys only moderately damaged are yet incapable of doing a large amount of work, whereas other kidneys very much damaged are capable of doing a large amount of work, and kidneys very slightly impaired have often serious clinical manifestations.

Now, in Dr. Williams's excellent résumé of the treatment of these different types of cases, considered in their purity rather than in the mixed forms, while it is wise for us to regard what he said very carefully, I feel that in the treatment we should give careful consideration to the causes of the disease, if discoverable and their removal or modification if possible.

Dr. Albert E. Larkin, Syracuse: It seems to me that these very excellent papers have emphasized the fact that we have a great deal to learn both in regard to the etiology and the pathology of nephritis. The work which these essayists have done is certainly to be most highly commended, and the work which they are doing with that of others along the same line will undoubtedly do much to clear up our knowledge on this subject.

I feel, with several of the other speakers, that it is a mistake for us to endeavor to pigeon-hole the various cases of nephritis which come under our observation. Some of these cases are affected with one variety of pathology in one portion of the kidney, and another variety in an adjoining portion, and for that reason it is difficult to classify them along any definite lines. On this account each case demands separate treatment, so that it is difficult for us to lay down any hard and fast therapeutic rules. I am sure that while all agree that the best line of treatment for these cases of nephritis is the same as that for arterial sclerosis, namely—the prevention of the disease before it is formed, nevertheless we are going to eradicate a great many of these diseased conditions by taking better care of our cases of acute infection, avoiding the strain of overworking, of overeating, and of anything that puts an extra strain upon the circulatory and renal apparatus.

Dr. Malcolm S. Woodbury, Clifton Springs: There is a possibility of going to extremes in regard to this matter of infection; especially is this true of supposed peridental infection. The fact that many of our patients have been suffering for a considerable length of time, without being able to find the definite cause of it, is likely to produce in them a frame of mind in which they are rather glad to welcome a definite diagnosis of whatever sort. Accordingly, one must be particularly careful in the avoidance of plausible theories unless they are sufficiently sustained by the facts.

With regard to the matter of tonsils, I am convinced that many cases requiring attention are overlooked. This is, in part, due to the methods of examination which are employed. The ordinary observation of the oral surface of the tonsil as seen by the examiner, who lays more stress on the delicacy of his touch in avoiding gagging the patient, than on the thoroughness of his observation, is of very little value. I am persuaded that in order to get an actual view of a tonsil one must either thoroughly retract the anterior pillar or else must gag his patient. The latter method, while rather disagreeable for the patient and for the examiner, really gives an excellent view of the tonsil. It is also helpful if one reaches rather far down toward the lower tip of the tonsil with the point of his spatula and makes contra-pressure against the tonsilar base with the finger on the skin at the angle of the jaw and strokes the tonsil firmly upward with the spatula point. It is often possible by this procedure to break definite abscesses in the tonsil, and thereby to express a rather large amount of foul smelling, badly infected material. Certain large, obviously cryptic tonsils, are, in all probability, not very dangerous, owing to the fact that they drain well, but some of the smaller, more deeply imbedded tonsils with the greyish white plastic exudate over their surface, are much more likely to cause trouble. The exudate evidently plugs up, or seals over the crypts, leaving excellent culture ground for the development of anaerobic organisms. One not infrequently sees in such tonsils the yellowish, white healed over, abscessed areas. The throat men, I believe, are rather too inclined to enucleate tonsils on the presentation of suitable medical evidence unless the throat itself appears to require operation *per se*; that is, a throat may be causing a serious constitutional disturbance even though the effect on the throat itself may not appear to be sufficiently bad to require tonsilar enucleation. There appears to be a hesitancy on the part of certain of the throat-men to tackle the individual at middle adult life, or after that period.

Our experience would indicate that many patients are able to carry about and successfully withstand infection for a considerable number of years, but when they reach the point at which their resistance is somewhat lowered either by disease or fatigue or advancing years, the infection begins to make itself manifest.

The patients discussed in Dr. Hunt's paper are notably of this type and we have come to the belief that there would be very much less arteriosclerosis and chronic kidney disease if such patients could receive thorough attention early in the development of their difficulties. This point, I believe, there is no danger of over emphasizing. Neither can one over-emphasize the actual necessity of thoroughness of procedure. Old sealed-over infected tonsil stumps can, and often do, cause a very great deal of serious trouble.

Peridental abscesses which are not repeatedly checked up by X-ray, after treatment, are sources of probable danger. *With regard to the decision as to whether one shall or shall not utilize operative procedures in these cases, I believe that the criterion is the definite demonstration of the actual presence of non-draining pus.*

There is no sound argument to sustain the theory of the conservation of non-draining pus.

Dr. Harris Weinstein, New York: So much work has been done in recent years on the blood chemistry in kidney disease, that the general practitioner is hardly competent to discuss the subject scientifically.

I have treated quite a good many nephritics in my time, and I think I have gotten along fairly well with them. I was always under the impression that nephritis, like any other degenerative process, is due to some infection. We often see a nephritic run on with a small amount of albumin, an occasional cast, not feeling badly, and often showing no symptoms whatever. The development of an acute infection, however trivial in character, such as a coryza, or tonsilitis, is frequently sufficient to cause a flaring up of the mild process in the kidney, showing evidence of an acute nephritis. As a rule the process subsides rapidly with a return to the former state. I believe that such occurrences in the course of infections is contributory evidence to the infectious origin of nephritis.

There is another view on the causation of degenerative diseases in general that was not touched upon in the discussion. It has been my experience that certain organs seem to be predisposed to disease in particular families, as if there existed a specific morbidity of tissue, probably an inherent lack of resistance to infection. This may be applied with equal force to nephritis, the offspring of nephritics being apt to develop the disease.

As to the dietetic treatment of nephritis, I believe it fallacious to undernourish the patient. If we bear in mind the exceedingly chronic character of the disease, it becomes evident that prolonged strict dieting is bound to cause disaster. Although I have always kept my patients on a low protein diet, I was never afraid of the color of meat, and have allowed beef as well as other meat, provided it was not taken in excessive quantity. Of course, in cases where there is nitrogen retention, or salt and water retention, the proposition is entirely different. In these cases we have to employ a diet systematically as part of our treatment.

In the cases with edema and high blood pressure, it is well to bear in mind that digitalis produces excellent temporary results.

Dr. Albert A. Epstein, New York: I have very little to add to what I have already said on the subject. There are, however, one or two points that are worth adding.

In the first place, although some may differ in this opinion I claim there is a type of renal disorder in which the disturbance is primarily of metabolic origin. Of course, other renal disturbances may occur concomitantly, so that there are cases in which we have mixed conditions. In these cases the procedure in the treatment frequently must be varied according to the immediate clinical indications, and absolute rules for treatment of such cases cannot be prescribed.

Dr. Williams has called attention to the urea findings in the blood. The subject needs a little subdivision there. In the pure form of nephrosis, that is the type in which the disturbance is metabolic in character, there is rarely a high urea content present in the blood, particularly in those stages of the disease in which the edema is pronounced. It is usually normal or subnormal. But when the edema begins to subside, the urea in the blood mounts very high. The reason for this phenomenon is very simple. We have a distribution of these substances in the bloody fluid, and as the edema subsides, the various salts which are retained in edema fluid, are transported to the blood, and remain there until the kidneys catch up the elimination.

As the result of the transport of these substances from the tissue to the blood streams, there is a temporary accumulation of these substances in the blood. This is not a contra-indication to the reduction of high protein diet in the treatment of such cases. If it is found at the outset that a patient has been receiving a spare diet, and there is an accumulation of nitrogenous substances in the blood, then it is wise to see that they are first eliminated before administering very much protein; but if it is found in the course of the treatment that the edema is subsiding, and at the same time there is an increase of waste nitrogen in the blood, that is no contra-indication to high protein feeding. I have seen cases where the known protein in the blood went up to two hundred and ten millegrams per 100cc. of blood, whereas originally it was only seventy, and this accumulated nitrogenous material disappeared as the kidneys caught up with the work that was put upon them.

Dr. Williams also called attention to the fact that in the early stages of nephritis, there is no increase in these substances in the blood, except in one case—in the case of pregnancy. There usually occurs an increase in the blood nitrogen. That is a well-known observation, but in those cases in which there is a threatening renal complication, the blood pressure goes progressively higher, and I have reason to believe that it is a very good indication as to whether or not renal complications will arise which may be very serious.

One other point, perhaps, that I would like to add is this: With regard to the treatment of the cardio-renal cases. Unless the indications are that the chief disturbances in a given case arise from the heart, the treatment stated here is useful; and the other disturbances that arise, such as acidosis, are merely secondary phenomena, and have to be so treated, just as secondary phenomena have to be treated in all other diseases.

Dr. John R. Williams, Rochester: In answer to Dr. Jones, I will say that in our clinic we attach much importance to the removal of all infection, whether or not it bears any causal relation to the disease. It should be borne in mind that all infections do not exist in the mouth.

I remember very well a case in which we removed tonsils that were undoubtedly diseased. A few weeks later, we found out that this patient had chronic bone disease that he had concealed both from his physicians and family for years. Amyloid kidneys resulted. If infection is to be considered, it should be studied thoroughly. If it exists in the mouth and has any serious relation to the metabolic condition of the patient, it will be found as a rule that the cervical glands are enlarged, and the tongue teeth marked and swollen. When you find a swollen tongue, showing the imprints of the teeth, you may be pretty sure that you are dealing with mouth infection.

I quite agree with the view that the treatment of kidney disease must be based largely on the disturbed physiology of the individual. You cannot approach the treatment of kidney disease from the anatomic standpoint.

The question of syphilis raised by Dr. Sperry is interesting to me. We have had many cases of nephritis. I think syphilis is seldom a causal factor.

As to the predilection of certain individuals for kidney diseases, I believe the point is well taken. I have made a study of that phase of the subject for a long time, and I am strongly of the belief that certain individuals have a predisposition to arteriosclerosis and other diseases of degeneration. Certain family strains tend to die in the same decade. In securing the history of an individual, we sometimes find that the mother, father, grandmother, and some of the children have died of the same disease at approximately the same age.

It is well to consider, therefore, in a given case the relation of the age of the patient to the age when former members of the family have died. As this death decade is approached, one may expect to find evidences of beginning degeneration in cases with such a family history. These patients should be safeguarded in every possible way against the deleterious influences in daily life.

BACK-ACHE FROM THE MEDICAL VIEWPOINT.*

By MALCOLM S. WOODBURY, M.D.
CLIFTON SPRINGS, N. Y.

IT is somewhat rare in medical literature that one has the temerity to introduce one's theme with the statement that his audience is about to listen to an epoch-making paper. None the less I feel that in this instance such an introduction is justified by the fact that after a thorough search covering the literature of a number of years it has been impossible to find that anyone has ever ventured to write on just this subject before. Furthermore, after attempting under friendly compulsion a dissertation on it, I am convinced that only one circumstance could in any likelihood give birth to such a prodigy, and that circumstance is a symposium; for a symposium requires that even the apparently fishless stream be dragged lest some hitherto undiscovered species be overlooked.

It is superfluous to remark, except that the subject requires it, that very numerous medical, surgical and neurological conditions may be associated with this symptom, or with pain in the back. For example, gastric and duodenal ulcer, benign and malignant intra-abdominal new growths, especially if large, new growths of the chest. The acute infections, notably influenza and acute tonsilitis, rheumatic fever, and typhoid, gall bladder disease, certain cerebrospinal affections, hemorrhoids and kidney disease. One's medical experience over not very long periods will include instances of all these and several other types, but in reviewing my own cases I should say that rarely in any one of them should I regard the back-ache symptomatically as much more than incidental, for, in few has it been the chief symptom complained of, except early in certain of the acute infections. I have not for instance seen any case of uncomplicated tabes with really troublesome back-ache that has not been associated with the more distressing root pains, or a case of intra-abdominal new-growth which did not present symptoms much more prominent than back-ache. It seems hardly profitable to attempt a differential study of types of back-ache in those medical conditions in which the diagnosis must rest upon other symptoms and in which the back-ache is symptomatically of secondary significance, and in which also its incidence is doubtless due to mechanical or toxic conditions clinically common to the types which properly should constitute the general groups to be mentioned presently. Neither is it profitable to over emphasize a symptom in order that it may furnish material for elaboration.

That I may not be misunderstood, I wish to remind you that this presentation includes only the types of back-ache which properly belong to the field of internal medicine.

As a matter of fact, in the clinic with which I am connected, persistent very troublesome back-ache is a symptom especially commonly encountered, and one which demands, on account of its severity, and the incapacity to which it gives rise, special and carefully applied treatment, but for the past seven years, at least, due in a large measure to Dr. Swaim's earlier work, and later to the work of his successor, the vast majority of these cases have been referred very soon after their admission to the Orthopedic Department as most of them are due to strain associated with postural defects, or to arthritis.

There is an important group of patients, however, who are perhaps in what one might call a pre-orthopedic state, who may be classed as medical cases. These are the patients who, either with or without evidence of strain have as an important element in the production of their back-ache a toxic state of some type which is without doubt secondary to infection. I have records of several such patients in whom a cure did not follow the proper application of orthopedic procedures but who cleared up satisfactorily after the removal of a source, or sources of infection.

The back-ache in such instances is usually lumbar, median, or more commonly, slightly lateral, described either as a deep ache or as a throbbing pain, in addition to which there may at intervals occur sudden attacks of very severe pain produced by slight strain when the patient is in an awkward position, or when rising from a stooping posture, the so-called "kink in the back." The ache is fairly constant, but decidedly increased by fatigue or strain. The symptomatology in these cases including the sensitiveness to deep pressure which is usually present suggests a low grade myositis. The condition is that known as lumbago, and is probably always associated with infection. These cases lead me to state a very definite conclusion in relation to back-ache from the medical viewpoint, it is this, there is so abundant evidence that various supporting structures may and often do suffer damage as a secondary result of infection in other parts of the body that this possibility should never be lost sight of in any condition in which such structures may be involved. So many cases of back-ache are due to strain that there is danger that an accompanying infection may be overlooked. The sources of infection should be treated with absolute thoroughness, temporizing measures may give rise to a very dangerous sense of false security. Old infected tonsil stumps for this very reason may often be more dangerous than large obviously infected tonsils. The same is true of the small submerged tonsil whose infected vessels, covering of plastic exudate, and surrounding adhesions, too often gets by unsuspected, when as has occurred in a number of our members of this pre-orthopedic group they may contain well defined abscesses. A helpful point in the diagnosis of such tonsils is the utilization of spatula-pressure on the tonsil, accompanied by a firm stroking movement of the spatula tip with simultaneous pressure of the finger tip against the skin external to the tonsilar base. By this means considerable quantities of foul smelling, infectious material may frequently be expelled, and can be bacteriologically examined if desired. Dental apical abscesses, if treated without extraction, should be checked up every few months with X-ray until bony formation is obviously satisfactorily accomplished. Other common sites of infection, notably the sinuses and seminal vesicles should receive proper investigation.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 21, 1918.

A neurological type, which should be emphasized, has been noted by Elsberg, who states that before the development of clear-cut symptoms, or signs, a subdural tumor may give rise to definitely localized back-ache. I have never, personally, been fortunate enough to see a case of known cord tumor in which other symptoms did not predominate.

J. Ramsey Hunt has reported a series of very interesting and rather rare cases of back-ache due to an intermittent ischaemic state involving the erector-spinae group and the quadratus lumborum. These cases appear to be due to a disturbance of the local circulation, secondary to disease of the lumbar arteries themselves, or of that part of the aorta whence these arteries take their origin. The circulation is sufficient when the muscles are at rest, but not sufficient to meet the requirements of active muscular effort. The pain in such cases is either unilateral or bilateral, always intermittent and produced by exercise and quite promptly relieved by rest, and in type closely resembles ordinary lumbago.

Back-ache from malignant metastasis to vertebrae is not at all rare and this symptom should lead to early suspicion in instances in which the possibility exists. I am inclined to the view that malignant disease of the thyroid should especially arouse suspicion as a not unlikely source of vertebral metastasis. I have at present a patient suffering from acute pyelitis, whose first and most distressing symptom was severe back-ache located directly over the offending kidney. The same symptom is also common in renal tuberculosis and rather frequently observed in acute nephritis. The ache or pain of renal calculus is most often localized either over the kidney or at the costo-vertebral angle. A dull ache in this same region may also be associated with movable kidney, but the fact that nephrorrhaphy not infrequently fails to relieve it, indicates the probability of postural or structural defect with back strain in many such cases. A transitory and rather unimportant type of back-ache in the intra-scapular region may be associated with the accumulation of considerable quantities of gas in the stomach.

The root pains, often encountered in neurological practice, can hardly be regarded as properly belonging to our subject.

In acute or subacute cases, spinal pain, often cervical, associated with tenderness, rigidity and spasm suggest the possibility of meningitis, and in suspects it is very essential that early lumbar puncture should be made as the prognosis may depend very largely upon it.

The lumbar, dorsal, and low cervical back-ache very commonly associated with visceroptosis, or heavy pendulous abdominal walls, is probably in a large measure due to strain, and bad posture (possibly to some extent also to mesenteric drag) and belongs to the orthopedist.

Aneurism of the descending aorta especially if sufficiently advanced to produce erosion of the vertebral bodies may give rise to back-ache.

In describing back-ache, Abrams attempts to localize types occurring in *visceral* disease in the following categorical, but suggestive manner: (1) Back-ache located between the shoulders, suggests gastric disturbance; (2) in the region of the right scapula, hepatic disease; (3) in the left scapular region, overloaded heart; (4) in the dorso-lumbar region, varicocele, disturbances of the colon, or ovaries; (5) in the costo-vertebral angle, renal calculus; (6) in the loin, kidney disease; (7) at the base of the sacrum, prostatic or uterine disease; (8) in the region of the sacro-iliac synchrondrosis, disturbances of the seminal vesicles, pelvic or rectal disease.

A type which should not go without mention is the dull persistent ache associated with muscular tension in the cervical region, exceedingly commonly complained of by fatigued women. Undoubtedly many of these cases are intimately associated with faulty posture, and may be relieved by proper correction of spinal strain elsewhere with its secondary favorable effect on the cervical region. Three possible elements, however, should be borne in mind as having a bearing in certain instances. These are fatigue, infection and ocular strain. This particular annoying type of back-ache will ordinarily disappear when these factors (together with orthopedic aid when necessary) have been eliminated.

With regard to the matter of diagnosis it would be inappropriate to weary you with a recitation of differential points, as it is obvious that if one will bear in mind the various conditions which may cause back-ache, it will be possible in most instances to make a correct diagnosis on thorough examination provided the condition is a purely medical one. Many cases cannot possibly be cleared up unless referred to a physician especially trained in the orthopedic observation of such difficulties, others must consult the gynecologist, and a few the neurologist, the roentgenologist obviously is indispensable in the matter of differentiation in many instances. No class of cases is better suited to group study.

In general, the method which we ordinarily follow when a patient is admitted complaining of back-ache is this: First, he is referred to the orthopedist, who, after examination, provided supporting apparatus is needed, attends to this matter with the aid of the apparatus maker, who is employed in the department. The orthopedist then introduces such exercises under the direction of a nurse as may be necessary, and prescribes massage, hydrotherapy or electrotherapy as may be indicated; second, a thorough search for infection is made; third, a pelvic examination; fourth, a general medical examination together with such laboratory investigations as seem desirable. These laboratory studies include X-ray work, bacteriological and serological observations, routine urine and feces examinations, or the more specialized methods of study of renal function, and the various types of blood examination as may appear necessary in the individual case.

The essential treatment, must, of necessity, rest on the etiology. Symptomatically—rest, massage, continuous galvanism, blue light, leucodescent, high frequency with iodine, the application of heat in various forms, short static sparks, and care of proper posture even when the patient is in bed, by the use of a firm mattress with a small pillow under the dorsal spine or elsewhere as indicated, are all worthy of mention, and when applied as Kipling might say, "Judgmatically," undoubtedly add greatly to the patient's comfort.

SYPHILIS AS A CAUSE OF BACK-ACHE.*

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NEW YORK CITY.

FROM an orthopedic viewpoint, back-ache has so many angles of interest that it would be impossible to cover the ground thoroughly in the time allotted for this paper. You are all more or less familiar with such etiological orthopedic factors as faulty attitude, the various chronic diseases to which the vertebrae are liable, strains affecting the lumbar and sacral regions and the results of fracture and abnormal development of the spinal structures, therefore it occurred to me that it might be more profitable to call your attention to a generally unrecognized cause of back-ache; namely, inherited syphilis. Several cases of this nature have come to my notice in the last two years in the course of a somewhat extensive study of orthopedic conditions due to congenital lues. During this time over three hundred cases of various types have been under treatment and several extremely interesting clinical facts have developed, not least of which is the proof that probably fifty per cent, or more, of the joint conditions we have heretofore ascribed to tuberculosis are really of luetic origin.

The broad dissemination of inherited lues and its subtle influence in all departments of medicine are but vaguely appreciated. We are prone to look upon this malady as a condition found usually in children, forgetting that syphilis of the congenital type does not differ from the acquired disease except that in those who survive the intrauterine infection the late manifestations appear to be somewhat less virulent. Nevertheless, as Warthin has demonstrated, once the treponema pallida have found entrance into the body we can never be sure that they are eliminated, for, as he has proved, the organisms may be found in the heart and liver at autopsy in syphilitic subjects who have undergone treatment and have been symptom free for fifteen or twenty years.

Again, if syphilis can be transmitted to the third generation it follows that the spirochetes invading the first foetus must live until the individual has reached adult life in order that they may be passed on to his offspring.

Therefore it is evident that many adults harbor the treponema pallida, although none of the classical symptoms of syphilis are produced by their presence. The toxins of these organisms, however, may be responsible for symptoms such as headache, myositis and neurological manifestations which, if the cause is not understood, baffle our most conscientious efforts.

The cases of back pain which have been observed in this study fall under the general classification of myositis. Their symptomatology suggests irritation of muscle and fibrous tissue by some toxic material, and the degree of discomfort ranges from dull lumbar back-ache to acute pain on any attempt at motion. Except for tenderness on deep pressure in the gluteal and lumbar regions no characteristic features have marked these cases, and the diagnostic perplexities they presented may be judged by the fact that they had been treated for a variety of disorders including uterine displacements, sacro-iliac strain, Potts disease, scoliosis and floating kidney, and in one woman a diagnosis of carcinomatosis was ventured.

While it has not always been possible to demonstrate the presence of syphilis in these patients the fact remains that they all presented certain evidence of an hereditary taint and that the symptoms cleared up under mixed treatment.

Throughout this study of orthopedic conditions due to inherited syphilis a clue to diagnosis has been found in the teeth. My work has been largely the clinical application of exhaustive research on the dental pathology of syphilis done some years ago by Joseph Cavallaro of Florence, Italy, the results of which were published in a series of articles which appeared in Dental Cosmos in 1908 and 1909 and which, therefore, did not come very generally to the notice of the medical profession. To Cavallaro's findings I have been able to add a few original observations of some value.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 21, 1918.

For the purposes of this paper it will be unnecessary to go further into the pathology of congenital syphilis than to point out that the disease is most virulent during the last half of gestation and the first few months of the child's life, a period corresponding to the time during which the decidous teeth the first permanent molars and the incisors are formed and partly calcified. To this it may be added that the dental structures of the foetus appear to be a favorite site for the colonization of spirochetes, and from them the organisms have been recovered in great numbers. As the inflammation induced by the presence of the treponema results in obliteration or constriction of the vessels supplying nutrition to the rapidly growing dental tissues of the foetus it is obvious that numerous defects in the form of the teeth and in the deposition of enamel may occur in the completed units.

In the adult, four of these anomalies are of considerable clinical interest. They are, in the order of their numerical importance, abnormalities in the form of the first permanent molars, wide spacing of the incisors, smooth topped molars and enamel defects of various teeth. These will be shown upon the screen.

It is not to be assumed that any dental anomaly is conclusive evidence that the patient has syphilis. Proof is still lacking that these peculiarities are always of luetic origin. It may be said, however, that they occur with extreme frequency in congenital syphilitics and that they have so often furnished a clue to a correct diagnosis that their clinical significance cannot be overlooked. Such striking results have been obtained by adapting this theory to joint disease. I am firm in the belief that we are not justified in making a diagnosis of tuberculosis in these cases until syphilis has been positively eliminated by the therapeutic test, and, while my experience with back-ache is limited, there is sufficient evidence that back-ache may in some instances be due to a myositis caused by syphilo-toxins to warrant further investigation of the subject.

The following briefly outlined case reports are submitted by way of illustration of the fact that, taking dental anomalies as a clue, it is possible by searching for corroborative evidence in the family and personal history of the patient to discover sufficient suggestive data to warrant the exhibition of anti-syphilitic remedies.

Case 1 (Woman Age 47 years). For a year and a half patient has had back-ache accompanied at times by pain down the left leg. Preceding this period she had for several years had back-ache lasting days and sometimes weeks at a time. The condition was ascribed to perineal laceration and sacro-iliac strain. The gluteal and lumbar muscles were extremely tender but there was no marked sensitiveness over the sacro-iliac joint. She was finally obliged to give up and her pains were so severe that it was difficult for her to sit up or turn over in bed. Examination of the teeth showed that the lateral upper incisors had never erupted and the molars were either extracted or capped. She had had five miscarriages and two retinal hemorrhages. Under the influence of mercury and potassium iodide there was distinct improvement in forty-eight hours and in a week the patient was symptom free and has since remained so.

Case 2 (Woman Age 30 years). For seven months patient and had lumbar and low dorsal back pains moderate at first and gradually increasing in severity until she was unable to perform her usual duties and indeed could not walk without discomfort. She was sent to the hospital with a diagnosis of Potts disease. An X-ray revealed no lesion of the vertebrae but it did show softened areas in the ribs which, taken in conjunction with her loss of weight and persistent pain, led two of the attending staff at the Hospital for Ruptured and Crippled to pronounce the case one of carcinomatosis. There was dental evidence of inherited syphilis and the woman was therefore placed on mixed treatment. In a week there was considerable improvement and in two weeks she was entirely free from pain and had attended a dance. She gained seven pounds in weight in a month and has had no return of pain. A Wasserman taken a week after medication was begun was positive.

Case 3 (Girl Age 16 years). Had had low lumbar back-ache for a year and frequent headaches. Under a diagnosis of lateral curvature of the spine had for several months been taking corrective exercises without result. On the evidence of inherited syphilis furnished by humpy molars she was placed on mixed treatment. In a week there was noticeable improvement and in a few weeks she was entirely without back pain or headaches.

Case 4 (Girl Age 14 years). Has had pain in the lumbar region for two years with periods of intermission, and her back was always "tired." Occasionally has been obliged to go to bed for a day or two at a time. She has widely spaced upper central incisors, tender gluteal muscles and tenderness of the tibiae and sterno-clavicular joints. After two weeks of mixed treatment she was symptom free and there has been no return of back-ache.

Case 5 (Woman Age 35 years). This patient suffered from backache for more than a year which increased in severity and was accompanied by severe sciatic pain, and finally there occurred tilting of the trunk, a condition which we are accustomed to associate with extreme sacro-iliac strain. For about three months she lay in the Hosiptal for Ruptured and Crippled, encased in a plaster cast from her toes to the lower border of her ribs. She was discharged somewhat improved but still having backache and leg pain and little change in her attitude. There was dental evidence of inherited syphilis, and she was therefore placed on mixed treatment. In five weeks she was entirely free from pain and her attitude was normal.

Similar cases have been noted in men and children whose symptoms resisted other forms of treatment and subsided upon the administration of potassium iodide and mercury.

In conclusion I wish to say that as all of the cases of back pain observed were not proved syphilis it is recognized that to classify them under this heading opens the way for criticism. My deductions, however, are based upon an extended experience with other types of cases where the diagnosis was not in doubt, and whatever etiological factor may have been responsible for the symptoms in these patients it is certain that their backaches were relieved by mercury and potassium iodide.

Discussion.

Dr. Albert Vander Veer, Albany: It is fifty-two years since as an invited guest, then as a delegate and later a permanent member I have been connected with this Society. Just before coming into the room I received a telegram from Dr. Jacobi, saying that he felt sad that he was not able to come to the meeting. I am here and I feel sad because I am appearing before an audience made up of such splendid workers who are doing their work so thoroughly well, so up-to-date, while I, having retired and in the background am here to discuss a subject, though to me exceedingly interesting, yet there are so many that know so much more about it at the present time, I feel that I may take too much of your time.

The study of backache was a large factor that entered into my becoming a gynecologist and studying abdominal surgery. The cases that came to my office complaining of backache, complaining of distress about the hips, complaining of pain in the back of the neck, for years were to me a source of anxiety and intense study. And I realized that there was an association between the term backache and dropsy, each unworthy of the term diagnosis. In those days we were signing death certificates of dropsy. We all of us have seen that word relegated so decidedly to the rear and out of date that it is scarcely remembered. It takes me back to my earlier days of practice—to suggest to a female patient that we ought to make an examination of the pelvis, we ought to examine the pelvic organs and see if that had something to do with her so-called backache, and in many cases this was refused but the time came which resulted in a more careful examination of our patient and we came into that atmosphere of displacement and misplacement and all that, and the diagnosis was made that the cause of your backache was due to your retroverted uterus, to this or that condition of the organ that was so much abused for so many years. It did some good, but I cannot relate to you the amount of harm as I look back now, must have been done, the forcible lifting up of a retroverted uterus by a strong uterine sound, and saying to the patient, as I have seen it done in the clinics of some very eminent men, "Now we have restored that uterus to a normal condition. She will be better of her backache." Possibly she was for a time.

Now the pendulum has swung along in the clock and the male side of the house came to us and said, "Doctor, I have come to you to have you examine my kidneys," and the female patient says, "I want to know the real trouble and what can be done for me, I am sure I have some trouble with my kidneys." Well, that led to a more thorough understanding of the function of the kidney and passed along with less real danger being done to the patient. And so before the days of antiseptic and aseptic surgery many of us reached the point of realizing that this backache was cleared up by a proper understanding of the function of other organs. I have always looked upon that time as the history of our pre-laboratory understanding of bacteriology, and finally of the septic organisms that have caused so much harm heretofore. Then came the days of sterilization and the getting of your instruments and dressing in proper condition so that you might make a more thorough examination and have a greater degree of safety, and then came the days of operative intervention, and from that time on we have known more about the causes of backache as it has come down through our men who have been working in the field of gynecology, and I might say abdominal surgery.

Now in doing all that work we passed along the knowledge and understanding of the erect position of the patient and the position of the organs, we worked out early the attitude of the patient toward the wearing of a shoe that was considered to be better for this particular patient, and I am bound so say to you that I have been surprised beyond measure in talking to sensible women, that the wearing of a high heel did not increase their backaches, while I have seen many patients who when asked to wear the simple commonsense shoe, always said that it relieved them.

It seems almost an imposition for me to stand here and call your attention to facts that are all perfectly clear and with which you are all so conversant. I am giving you a little bit of history.

Then we came to the cases where we could find nothing wrong with the pelvis, cases where there was trouble with the deep seated muscles, the long muscle of the back, there were tender points. Pick up any paper if you please today and see what use is made of that backache. It is a term yet that we cannot altogether exclude from our patient's mind. Now what was the discovery that came along with the rest of our thoughts and studies? We finally took into consideration the tonsil. When this was removed the patient was relieved of the backache and it never returned.

Now what does this all lead too? When I think of the laboratory period, when we can call in the aid of the scientist in that direction to aid us in looking after the condition of the body through the secretions and all that, we come nearer to a correct diagnosis, we come near to accomplishing that which to me is of so much comfort. We don't sit down in our chair now and say, "How old are you?" "Married?" and ask those commonplace questions we used to ask, and say, "Oh, well I will give you a prescription that is going to help you." We have passed out of that atmosphere. We have a card catalog that keeps us in mind. We look back and see what we have recorded last year or last week and we are able to reach the proper diagnosis which is so important. There is one thing that ought to comfort you as it comforts me, and that is that we do get at the causes of these strange conditions that have been neglected in the days and years gone by.

Think of the days, my good hearers, when the subject of touching a fibroid tumor was almost a death-knell to the reputation of the man who treated it, much less removed it.

Don't let us neglect anything and put upon our program even so simple a term as back-ache. It is because a patient suffers that she seeks relief. If you don't go at these cases thoroughly and well you build up a class of practitioners that say they can cure such a condition, and people will listen to them. People come to us medical men to get relief and not simply to be turned away. They want to get relief and these were cases that dragged and dragged with us in the early years without reaching the causes and without affording relief.

Dr. Loring T. Swaim, Boston: I am afraid that I cannot add anything to Dr. Robert's paper. I know nothing about that subject, I think that it is purely original and I am going to look for it afterward. Of course cases are recorded, but I don't think any work like this has been done.

In regard to Dr. Woodbury's paper—I think a large majority, probably 65 per cent, of the cases of low back pain, also have pain in the cervical spine as well. I think it is largely a question of muscles, the aching in cervical region being secondary to the low back strain. As the speaker has said, we have all got to stand together, the gynecologist, orthopedic surgeon, and the neurologist, because all these specialists see many back cases and each should be familiar with the work of the other in order to be able to recognize cases outside his particular province. We should freely ask aid of each other where it seems advisable. Dr. Vander Veer has spoken of the use quacks make of backache. If we do our work together as we should, cases won't cultivate quacks.

The treatment of which very little has been said of course, depends on the cause. The orthopedist should be called in whenever orthopedic support, exercise, correction of deformity are to be carried out, the gynecologist should be called in where gynecological defects and misplacements are apparent; the neurologist where distinct nerve involvement can be found. A large percentage of back cases, however, are orthopedic. Operations on the back are very few and are chiefly only used where there is organic trouble such as tuberculosis. In order to get back cases well we need the combined skill of the medical profession. From the orthopedic standpoint back cases range from functional weakness due to faulty posture, muscle strain, to tuberculosis of the spine with possible displacements and fractures. No harm has ever been done by support of the back. Much harm has been done by rash operations.

My plea is that we should all work together in better harmony so that we shall understand this difficult problem. Otherwise I think the patient suffers.

Dr. James E. King, Buffalo: The only paper of the symposium which I feel competent to discuss is the one which was not read and which was to deal with backache from the gynecologist's standpoint.

Backache occurs with overwhelmingly greater frequency in the female. This fact is accountable for a deep rooted conviction among the laity that backaches in women are due to derangement of the pelvic organs. Unfortunately this view is shared by a large number of the profession and as a result needless operations are done and much unavailing gynecologic treatment employed to cure a backache whose cause is not gynecologic. The occupation of women, childbearing and certain anatomic peculiarities tend to produce other conditions that also cause backache. We therefore find spinal relaxation, general enteroptosis and sacro-iliac disease as common causes. A woman, therefore, who presents herself complaining of back-ache should be most carefully examined for the existence of these causes as well as of causes arising from the pelvic organs.

The backward displacement of the uterus is the most frequent pelvic cause. Frequently, however, the prolapsed ovary, sub-involution, metritis and general pelvic congestion are overlooked and if the uterus be in position the pelvic organs may not be considered to be at fault. On the other hand, retro-displacement may exist without causing symptoms. Because a backache is associated with a retroversion it does not necessarily mean that the retroversion is responsible for it. Many a back-ache which persists after successful surgical correction of a displacement has its origin in a sacro-iliac condition. A painstaking examination would make it possible to avoid all such mistakes. There is nothing that brings greater discredit on surgery than the disappointment a woman feels who has undergone a surgical procedure and still has her back-ache. It is also true, however, that many persistent backaches are relieved by the correction of displacements and there is no operation in surgery that can bring any greater satisfaction to the patient and surgeon than these successful cases. If a doubt exists that a displacement is the cause in a given case, replacement and a carefully fitted pessary may definitely settle the question.

Annual Report of the Counsel

TO THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.*

Sirs:

Your counsel has the honor to submit herewith his report covering his activities in behalf of the Medical Society of the County of New York during the year closing on the 22nd day of November, 1918.

Counsel's field of activities has been wide and varied, including investigations and prosecutions against druggists and laymen practising medicines, corporations, unlicensed physicians from foreign countries and the United States, practising medicine without a license, investigations of the activities of electro therapeutists, face specialists, chiropractors, naturopaths and abortionists. Your counsel has had a very comprehensive translation and examination made of forty foreign language newspapers, as well as a number of English newspapers of the advertisements of quack doctors and physicians who hold themselves out as specialists in certain diseases. Counsel appeared on behalf of the Society before the Governor of the State of New York at the public hearing held in opposition to the Whitney Bill, which dealt with the regulation and control of the selling and dispensing of narcotic drugs in this State.

Your counsel has been consulted frequently by various Departments of the State, City and Federal Government, including the Department of Education, the Intelligence Department of the Army and Navy, the Character Committee of the Bar, the Health Departments of the City and the State of New York, the Police Departments of New York and other cities, the University of the State of New York, the Department of Justice, the Port Alien Enemy Bureau, the Narcotic Squad of the Police Department of the City of New York, the Federal and County District Attorneys and the State Department of Labor.

Counsel has co-operated as far as possible, with these various agencies in their investigations and actions and has been able to contribute from the files in counsel's office valuable information in response to inquiries from these sources. This line of activity is suggestive of a field of usefulness of the counsel's office quite apart from the mere prosecution of individual cases.

NEWSPAPER ADVERTISEMENTS.

Counsel has made a very complete and exhaustive investigation of advertisements in English and foreign language newspapers of physicians, chiropractors, beauty parlor specialists and quack doctors.

In the English printed newspapers no advertisements of physicians appear with the exception of Dr. F. R. Ward, who transacts business under the name of Electro-Medical Doctors. Dr. Ward's advertisements frequently cover a full half page of the newspaper. Your counsel is endeavoring to get the newspapers in New York City to exercise great care to see that the law is not violated in this class of advertisement.

In the foreign language newspapers, the advertisements of quack doctors holding themselves out as specialists in venereal diseases of men and women are published extensively, but they are devoid of any language which violates the statute. These advertisers generally hold themselves out as specialists in men's and women's diseases, particularly, rheumatism, stomach, liver and kidney troubles, hemmorrhoids, skin diseases, blood poisoning, etc. The advertisements are not violative of Section 1,142A of the Penal Law, which prohibits the advertising of physicians to cure venereal diseases. The advertisements of many of the physicians in the foreign language newspapers consist merely of a statement of name, address and office hours. Your counsel has found very few of the physicians who thus advertise not to be registered. It has been found that several physicians hold themselves out as practising medicine under corporate names, or under registered trade names, and some doing business under names other than their own.

Your counsel is endeavoring to eliminate all obnoxious advertising of this nature.

NARCOTIC DRUGS.

Pursuant to the instructions of the Society, your counsel attended before the Governor of the State of New York, at a public hearing held at Albany on April 24th, 1918, to oppose the "Whitney Bill," which is entitled, "An Act to Amend the Public Health Law so as to provide for the regulation and control of the sale, prescribing, dispensing, dealing in and distribution of cocaine and opium and its derivatives and making an appropriation therefor."

Your counsel prepared on behalf of the Society, a memorandum in opposition to the signing of said bill.

A few excerpts from counsel's memorandum follow:

"The Medical Society of the County of New York, one of the oldest and largest societies of medical men in the State, if not in the entire country, having among its membership many men who are leaders in their profession, in their several branches, desires, in behalf of its members, who remain here to administer to the suffering at home, as well as in behalf of those who are many, who have gone beyond the seas or into the camps, to make and maintain our boys 'fit to fight,' an emphatic protest against this measure which is now before his Excellency, the Hon. Charles S. Whitman, Governor of the State of New York, for his consideration.

"This measure, radical in the extreme, and probably in the main unconstitutional, was introduced and passed

* Read at the Annual Meeting of the Medical Society of the County of New York, November 25, 1918.

by the Legislature between the 7th day of March and the date of the adjournment, without consultation with representative men and bodies of the medical profession most vitally affected by it, and with utter disregard of the views of conscientious medical men who have unselfishly served in the preservation of the public health of the various communities of this State.

"The bill, because of its provisions and omissions is to be condemned. While embodying many of the fundamental provisions of Chapter 431 of the Laws of 1917, it has new provisions subject to most serious objections and by the repeal of Section 1,746 of the Penal Law and Section 249D of the 1917 Statute, has reduced the real serious offenses from the grade of felony to that of misdemeanor. The Underworld traffiker in drugs and the purveyor of narcotics to children under the age of sixteen years, under our present law are guilty of felony. Under the bill now under consideration, those malefactors and the reputable physician who, by inadvertence or ignorance violates the statute in a most technical way are placed on a parity as misdemeanants. For the steel teeth of the present law in dealing with the underworld traffiker in narcotics, there is substituted a commission form of enforcement. But the present law, Chapter 431 of the laws of 1917, has in a year become very old fashioned, in that, it did leave the medical practitioner some opportunity to practice his profession, and left still in the great scheme of narcotic law administration, some few unblended functions for the executive, legislative and judicial branches of Government.

"The framers of the present bill have evidently seen the folly of the preservation of such trinity and, believing in the inviolability of human judgment that may emanate from one person, when clothed with the power and title of Commissioner, have blended the legislative, executive and judicial functions of Government into a delectable, well-advertised cure-all potion to be administered in draft form to the medical practitioners who still are within the borders of the State, and bottled and stored for their patriotic professional brethren upon their return from the front.

"Seriously speaking, the entire practice of medicine in this State which involves the administration of narcotic drugs, is to be given over into the hands of a Commissioner who may be a layman, who is given the legislative function to make rules and regulations which shall have force of statute; the judicial function to summon, swear and examine witnesses and, in the exercise of this power, 'no communication made to a physician shall be deemed confidential'; to make rules and decisions, revoke certificates for cause 'deemed by him sufficient,' to interpret and clarify the provisions of the statute, as well as to supplement and effectuate the purpose and intent of the statute, and executive function to enforce the statute.

"It doubtless would strike a lawyer as a peculiar anomaly were a lay Commissioner appointed to formulate rules in respect to the practice of law by lawyers and such an attempt of outside and possibly political interference with the practice of a great profession would doubtless, with good cause, be resented. The practice of medicine is a more technical, scientific and highly specialized pursuit than that of the law, to which some 14,000 men of this State have dedicated their lives and they may justly and properly resent, in any field or branch of their practice, the interference, dictation or inquisition from a layman.

"This lay Commissioner and his deputies have the right, under this bill, to harass legitimate practitioners of medicine by the examination of their patients under oath, and by the examination of the physician himself under oath, and can compel him to divulge sacred and confidential communications of his patient, for, as to all matters within the jurisdiction of the Commissioner, 'no communication made to a physician shall be deemed confidential.'

"The only exemptions from the provisions of the statute specifically mentioned, are contained in Section 436 and relate only to the possession of narcotics and not to the dispensing and administering of them.

"Under section 437 of the proposed act, all the records of the Commissioner's office, including the names and addresses of addicts, the records of proceedings including the confidential communications of patients to physicians which we have seen may become a part of such records, 'shall be regarded as confidential and shall not be open to inspection by the public or any person other than the official custodian of such records, such persons as may be authorized by law or the Commissioner to inspect such records, and the persons duly authorized to prosecute or enforce the federal statutes or the laws of the State of New York, but then, only for the purpose of such prosecution or enforcement.'

"This means that the Commissioner may permit a person to inspect such records and have access thereby to the sacred confidential communications contained therein. This power alone on the part of the Commissioner may be subject to grave abuse, and in itself would warrant the disapproval of the entire measure.

"We find under Section 442 of the proposed act that a physician's professional career, may be suddenly cut short by the revocation of his license to practice if, by chance, or ignorance he is convicted of a violation of one of the many technical provisions of this Statute.

"The conviction of a lawyer for some technical misdemeanor does not, in itself, constitute grounds for the revocation of his license to practice law, and the facts must be such as to show some moral turpitude on his part, before the Appellate Division will deprive him of his right to practice. There is no guarantee, in this statute, that the misdemeanor for which the physician may be convicted may not be one of the most technical character and may not result in a revocation of his license to practice."

On May 13th, 1918, the Governor of the State signed the said Bill and the same is now a law. Some of the provisions of the Act became effective on November 1st, 1918, particularly those dealing with the creation of the Commission having control of the drug situation, and the remaining provisions of the Act will become effective on February 1st, 1919.

There was referred to counsel certain complaints against duly registered physicians that they were traffiking in narcotic drugs under the cloak of their medical license. From a moral standpoint, the facts in the cases submitted strongly supported the charge, but an examination of the evidence failed to make out any case at law. One of the men against whom such a charge was brought is at present under indictment by the Federal authorities.

In these matters, counsel conferred with the District Attorney of this County and the Police Department, as well as with the representatives of certain Charitable Institutions, whose inmates were vitally affected by the practice, with a view of taking some action, if possible, to prevent such physicians abusing the privileges granted to them. It is apparently the deficiencies of the present law that are responsible for much lay agitation for the stricter control of physicians in the dispensing of narcotics.

Cases such as those referred to above are largely responsible for the statutes which place upon legitimate practitioners of medicine apparently unnecessary hardships in the use of narcotic drugs by them in their practice.

Chiropractors.

During the past year a large and increasing number of chiropractors have been doing a flourishing business in this city. Counsel, in an effort to curtail their unlawful practice, has made a thorough and systematic investigation of complaints against them. Judging from the experience of the investigators who have been assigned by counsel to these cases, the chiropractors are fully cognizant of the campaign which the Society is and has been waging against them.

The usual experience of our investigators is that the chiropractors refuse to admit them because they are unknown. The question invariably asked is, "Who recommended you?" and if the investigator is unable to give the name of a patient known to the chiropractor, he is not admitted. Then again, the charges are very high. Most of the chiropractors investigated, who are practising in this city, insist that prospective patients agree to take a series of treatments, payable in advance and refuse to give single treatments. Of a number of cases investigated, full details of which were given in the monthly reports of counsel, the investigators found that the chiropractors were no longer carrying on business at the addresses given.

DRUGGISTS.

Your counsel investigated a number of complaints sent to him of druggists practicing medicine without a license. These complaints were investigated and practically in every instance it was found that the druggist merely suggested that patent medicines which are ordinarily on sale in drug stores be taken for illnesses of which the investigators complained.

Many complaints were sent to your counsel, which upon investigation, proved to have no foundation in fact. In certain districts of the city, anonymous complaints were sent in to counsel which were apparently actuated by neighborly rows or spite.

PHYSICIANS.

Your counsel has received a number of complaints of physicians practicing medicine without a license which, upon investigation, revealed that the doctors were not only licensed, but reputable physicians and in many instances, members of the Society. Counsel has referred some complaints to the counsel of the Medical Society of the County of Kings, as the doctors complained against were residents of Kings County.

Counsel has been consulted frequently by attorneys, physicians and laymen as to what constituted "practicing medicine" under the Public Health Law, the interpretation to be placed upon various provisions of the Public Health Law as it applied to nurses, chiropodists, druggists, etc.

PROSECUTIONS.

MAXWELL PODGUR, 21 East 112th Street:

This defendant was charged with practicing medicine without a license. Your counsel wrote to the University of the State of New York for the purpose of ascertaining whether a Dr. Maxwell Podgur was licensed to practice medicine in the State of New York and was informed that the defendant was a graduate of the College of Physicians and Surgeons of Chicago in 1902 and that in January, 1914, he took the New York State Medical Licensing examination and failed in all subjects at that examination. Counsel sent one of his investigators to premises 21 East 112th Street and he found a sign reading "Dr. Podgur" in a window on the ground floor. The investigator inquired for the doctor and was admitted by a young man about 33 years of age, 5 feet 6 inches tall, black hair and small black moustache, well built, 150 pounds, who stated he was Dr. Podgur. The investigator told him his symptoms and the doctor diagnosed the trouble, prescribed and accepted a fee. A warrant was issued on November 15, 1917, for his arrest and on the 17th of November, 1917, he was arraigned before Magistrate Nolan on the charge of practicing medicine without a license. He was released on station house bail. He pleaded not guilty and was held in $200 bail and the case sent to Special Sessions for trial. The case was tried on the 11th of January, 1918, at which time the defendant withdrew his plea of not guilty and pleaded guilty to the charge of the unlawful practice of medicine. After investigation by the Court of Special Sessions, Podgur was fined $100 or in the alternative, thirty days in jail.

FREDERICK GEORGE FISHER:

This defendant was charged with practicing medicine without a license under various names, to wit, Frederick George Fisher, F. G. Fisher, and F. Fisher, at various places between 49th Street and 81st Street on the east side of the city. Your counsel sent an investigator to premises 221 East 53rd Street on April 2nd, 1917. In the window of an apartment on the ground floor, was a sign reading "Dr. Fisher." The investigator was received by a man about 5 feet 3 inches tall, brown hair, mustache, weight about 135 pounds, and about 35 years of age, who, in response to an inquiry, stated he was Dr. Fisher. The investigator explained imaginary symptoms to the doctor, who diagnosed his trouble, treated him, gave him a prescription and accepted a fee of $1.00. The investigator examined the books in the office of the County Clerk of the County of New York, known as the Register of Physicians and Surgeons and found no person registered by the name of Frederick George Fisher or George Frederick Fisher. A warrant was issued for the arrest of Fisher on the 29th of October, 1917, and Fisher was arraigned before Magistrate Murphy on the 30th of October, 1917, on the charge of practicing medicine without a license and at that time he claimed to be registered in Albany but admitted that he was not registered in New York County. Your counsel communicated with the State Department of Education and was informed that no one by the name of Frederick George Fisher or George Frederick Fisher had received a license to practice medicine from the Department. He waived examination and was held in $300 bail for trial in Special Sessions. Defendant withdrew his plea of not guilty and pleaded guilty. On February 4th, 1918, the Court of Special Sessions postponed his sentence to February 11th for the purpose of further investigation. On February 11th he was sentenced to the Penitentiary to serve an indeterminate sentence.

HARRY A. PRATT, 155 East 115th Street:

On a complaint that the defendant was holding himself out as a physician and practicing medicine without a license, your counsel instructed one of his investigators to call at the premises 155 East 115th Street, where Pratt was carrying on his activities. The investigator called and asked for Dr. Pratt. He was informed by the woman who answered the bell that she did not believe Pratt was a doctor and she wanted him to vacate her premises. The investigator then went upstairs to the room which Pratt was occupying and which had a heavy padlock on the door. A young man, about 26 years old, 5 feet 2 inches tall, blond hair and light blond mustache, weighing about 118 pounds came to the door. The investigator noticed that his left hand was partly paralyzed. The woman called out, "Dr. Pratt, here is a patient to see you." The investigator told him of his symptoms, he diagnosed the complaint, gave him some medicine and charged $1.00. He stated that he was working for the Government and had just come from the Post Graduate Hospital where he had been before entering the Government service. He said he specialized in gonorrhea cases. He gave the investigator a card which had on it the following:

"Telephone Harlem 7537 United States Medical Staff
Dr. HARRY A. PRATT
San Francisco, California 155 East 115th Street, N Y."

The investigator searched the books in the office of the County Clerk of the County of New York on the 15th of November, 1917, and found therein no person by the name of Harry A. Pratt as being authorized to practice medicine. Whereupon a warrant was sworn out for his arrest on the 16th of November, 1917, and Pratt was arrested on the 17th of November, 1917, and taken to the 5th District, Magistrates' Court, where a hearing was had before Magistrate Nolan. He pleaded not guilty and was held in $300 bail for trial in Special Sessions.

A complaint was brought by the Presbyterian Hospital against Pratt on the ground that he was holding himself out as a physician and practicing medicine, whereas he was merely one of their orderlies. A further charge was made by them that he had narcotics in his possession and on this charge he was held in $1,000 bail. In default of bail, he was held in jail. His room was searched, and linens, bandages, medical instruments and medicines, the property of the Presbyterian Hospital, were found there.

Another charge was made against him that he had performed an abortion upon one Frieda Lanne in his own room at 155 East 115th Street. Miss Lanne testified that she had paid Pratt $117.

Your counsel received a communication from Lieutenant-Colonel W. H. Miller of the Medical Corps, United States Army, that the records of the Department did not show the name of Harry A. Pratt.

On the charge of abortion he was indicted by the Grand Jury. On the trial at Special Sessions he withdrew his plea of not guilty on the charge of unlawful practice of medicine. On the complaint of having narcotics in his possession his plea of not guilty stands. He claimed as a nurse, the narcotics which he had in his possession were used as stimulants and therefore, he did not have them in violation of the statute. Judgment was suspended January 11th, 1918. He pleaded guilty to a charge of abortion and was sentenced to the State Prison on this charge for one year and six months.

AUGUST H. WERNER:

A complaint was made against August H. Werner that he was practicing medicine at 29 East 30th Street without a license and also practicing in the name of Dr. Joseph Coleman, a regularly licensed physician and a member of the County Medical Society. Your counsel sent an investigator to the office of Werner on October 24th, 1918. He asked the maid who answered the bell whether Dr. Coleman was in and she replied "I expect him in a few moments." The man who received the investigator and who stated he was Dr. Coleman was in fact August H. Werner, who was prosecuted by the Medical Society in 1915 and 1917 for practicing medicine without a license and convicted. The investigator explained his alleged symptoms, Werner diagnosed the case and prescribed for him.

Several days prior to this investigation, a Mrs. Viola M. Lewis called at the office of your counsel to make a complaint against Werner. She stated that she had been recommended to him, had called at his office and after an examination he stated she had a tumor which had to be removed. He charged her $150 in advance to perform the operation, which she gave him. He then sent her as a charity patient to Bellevue Hospital where she remained in the ward for a week. As the epidemic of influenza was at its height, she became frightened and left before anything was done for her. She demanded the return of her money from Werner but he refused to pay it back.

Your counsel secured a warrant for the arrest of Werner and he was arraigned before Magistrate McGeehan, First District, Magistrates' Court, on November 2nd, 1918, charged on one of the complaints with practicing medicine without a license and held in $1,000 bail. On the return day he asked for an adjournment until his counsel would be prepared to defend him. Two days later he was again arraigned and appeared with his counsel.

Your counsel then preferred another charge against him on the Lewis complaint for practicing medicine in the name of another physician. He waived examination and was held for Special Sessions on the misdemeanor charge and General Sessions on the felony charge. The trial in Special Sessions is set for January 20th, 1919, and no disposition has been made as yet of the case in General Sessions.

FERDINAND A. PINZ, 247 East 81st Street:

Defendant was arrested for unlawfully practicing medicine, also charged with having narcotics in his possession and subsequently indicted for abortion.

Counsel procured the aid of the State Labor Department and through their investigators found several persons upon whom the defendant had practiced and for whom he had prescribed.

Warrant was obtained and defendant arrested on November 5th, 1917, and brought before the Magistrate. Hearing was set for December 7th. At the time of his arrest, there was found in his possession large quantities of narcotics, consisting of heroin, morphine and opium and a number of hypodermic needles. A second complaint was lodged against him for having narcotics in his possession and on December 7, 1917, before Magistrate Fushs he was held in $500 bail for each charge, for trial in Special Sessions. This defendant was also a chiropractor, conducting a school known as the New York Society for Medico-Literary Research and Physiological Therapeutics. Held for trial in Special Sessions. Held in $10,000 bail, reduced later to $5,000. Trial in Special Sessions adjourned to February, 1918. After furnishing bail he was held by the Federal authorities as a suspicious alien. Indictment for abortion has not come on for trial and the charges against him for unlawful practice of medicine and for the possession of narcotics has been suspended until after the trial of the abortion charge. On April 26th, 1918, defendant brought before the Court of Special Sessions for sentence, it having been previously arranged between his counsel, counsel for the State Department of Labor and your counsel, that the bail on the abortion charge be dismissed, as the District Attorney felt that there was not sufficient evidence to warrant a conviction; defendant pleaded guilty to charge of the unlawful practice of medicine, and he was discharged on his own recognizance on the charge of having narcotics in his possession, upon the condition that the Court at Special Sessions would sentence the defendant to a penitentiary sentence. After the facts were presented to the Court, the defendant was sentenced to the penitentiary and your counsel will lay before the Parole Board all facts in connection with this defendant.

ROBERT PAUWELS:

A complaint was made against this defendant that he was practicing chiropractics. On the 21st day of February, 1917, your counsel instructed his investigator to go to premises 110 West 40th Street where Pauwels maintained an office. Upon the door of the office was printed the following:

"ROBERT PAUWELS, Phr. D.C.C., Phil.C.
Graduate in Chiropractics
Hours 10 to 1 6 to 8 Saturdays
10 to 1"

He was admitted and asked if the man who spoke to him was Dr. Pauwels. He answered in the affirmative and the investigator explained his alleged symptoms. Pauwels examined the investigator, who had undressed in the meantime, and manipulated his spine; diagnosed the complaint and said he would cure it on payment of $10 for six adjustments. The investigator paid him $3 down and made an appointment later. The investigator made another visit to Pauwels and practically went through the same procedure. A warrant was issued on March 20th, 1917, and Pauwels was arrested on March 21st, and brought before Magistrate Cornell in the Second District Court. He pleaded not guilty to practicing medicine without a license. Waived examination and was held in bail for trial in Special Sessions. The case was on the calendar for trial several times and finally was reached on November 26th, 1917. After presentation of evidence on behalf of the prosecution of this defendant and of their defense for such prosecution and the cross-examination of the defendant by your counsel, the Court held that the People had not sustained the burden of proof that the defendant was unlawfully practicing medicine and dismissed the complaint against him.

Electro Medical Doctors:

We are investigating the advertisements of the Electro Medical Doctors, who operate under the management of F. R. Ward. Their advertisements are very extensive, frequently of half-page ads. They offer to give X-ray examinations for $1.00. The following two instances have been brought to the attention of your counsel. In one case, a man paid $1.00 for an examination and was then told at the Electro-Medical Doctor's office that he had a very serious condition of the stomach; that if he paid him $500 he would cure it by means of electro baths and serum treatments. After the man had six treatments an additional fee of $1,000 was demanded. In another case, one investigator paid $1.00, had an X-ray taken, whereupon $200 was demanded to cure him of an alleged stomach trouble. The investigator went to his own physician, was examined and told nothing was the matter with him.

Community Pay Clinic:

Your counsel appeared before the State Board of Charities upon the application made by the Community Pay Clinic for the establishment of a free dispensary where the patients may make appointments for consultation and treatment for pay. Subsequently, due to the opposition to the granting of a license by this Society, the application for a license was withdrawn. At the same hearing your counsel objected to the granting of a license to the Mechanical Treatment Clinic which dealt with the granting of a license to chiropractors. The application here, for a license, was also denied.

National Photographers, Inc., 1544 Broadway:

There was brought to the attention of your counsel, postal cards which were sent to members of the Society, notifying them that a photographic register of physicians was being prepared and that they should call and arrange for the taking of their photographs. Your counsel advised the persons carrying on this business that they should discontinue such representations. Your counsel received a letter from the National Photographers, Inc., in which they stated that they had immediately complied with the request.

Counsel desires to express to the Society his appreciation of their confidence and the support they have given him during the last year. To the Comitia Minora and the Board of Censors he expresses his gratitude for their helpful and earnest co-operation in the labors which he has performed with them and takes this opportunity to thank, in behalf of the Society and its officers, the various agencies of the State and Municipal Government, for their active and harmonious co-operation in the enforcement of the laws pertaining to the practice of medicine.

The war conditions that existed during the past year have placed added burdens and responsibilities upon counsel and in some respects have made difficult the performance of his tasks. The staff of counsel's office that assisted in the medical work was considerably crippled by the call to the colors of his valued assistant, Mr. Robert Oliver, and by the performance of the highest duty of citizenship as Captain of the Field Artillery at the front, of his law partner, Lloyd Paul Stryker. I desire to take this opportunity of expressing my appreciation of the services of Mr. Oliver during the portion of the year for his assistance to counsel in this work and to Mrs. Jean H. Norris, his successor, for the valuable aid rendered during the balance of the year.

Interwoven with the problem of reconstruction will doubtless be many new questions during the coming year that will require on the part of this Society and its counsel, new effort and fresh zeal.

In closing the present year, let us dedicate ourselves to the solution of these questions to the best of our ability and in the spirit of unqualified patriotism.

Respectfully submitted,
George W. Whiteside, *Counsel.*

Summary.

Year Ending November 22, 1918.

Complaints received, total		107
Against men	71	
Against women	14	
Against corporations or associations	22	
	107	107

Sources.

From citizens	29	
From physicians	21	
From Board of Health	1	
From District Attorney	1	
From anonymous	14	
From Medical Society	40	
From Board of Regents	1	
	107	107

Character.

Unprofessional conduct	3	
Unlicensed physicians	50	
Chiropractors	17	
Abortionists	6	
Midwives	5	
Workmen's Compensation	2	
Medical corporations	10	
Drug selling	5	
Druggists practicing medicine	5	
Malpractice	1	
Naturopaths	3	
	107	107

The Medical Directory of New York, New Jersey and Connecticut

Errata

Kindly insert the following in Vol. XX of the Medical Directory:

Page 74:

Dorman, Franklin Abbott, 133 East 57th St., New York. 11.30 to 1, by appt. Tel., Plaza 406.

Page 97:

Hardy, Sarah Drowne Belcher, 419 West 118th St., New York. Tel., Morningside 498.

Medical Society of the State of New York

Meeting of the Council

The meeting of the Council was held in New York City on December 14, 1918. Owing to the President being in France, the First Vice-President, Dr. James F. Rooney presided.

The meeting was called to order by the Acting President at 10 A.M., and on roll call the following answered to their names: Drs. James F. Rooney, W. Meddaugh Dunning, Floyd M. Crandall, Frank Van Fleet, Parker Syms, Frederic C. Conway, Joshua M. Van Cott, Dwight H. Murray, Frederic E. Sondern, Henry Lyle Winter, Luther Emerick, G. Massillon Lewis, John H. Pratt, Albert T. Lytle. Mr. Lewis, Counsel of the State Society was also present.

A quorum being present, Dr. Rooney announced the meeting open for business.

The minutes of the last meeting as published in the June issue of the New York State Journal of Medicine were read. Moved, seconded and carried that they be approved.

The Treasurer reported that after the payment of the bill for the 1918 Directory, that there would be a balance in the bank of $6,562. The Treasurer also reported that out of a total membership in the State Society of 8,619, there were 1,010 who had not paid their 1918 assessment, but as money was being received daily from the County Treasurers, a large percentage of these would pay before the end of the year.

Dr. Dwight H. Murray, Chairman of the Committee on Arrangements presented the following names of members of his Committee, for approval by the Council: Drs. Frederick H. Flaherty, Albert E. Larkin, Horace B. Pritchard, George S. Reed, Albert G. Swift, Herman G. Weiskotten, and Edward J. Wynkoop. Moved, seconded and carried that they be approved.

Dr. Henry Lyle Winter, Chairman of the Committee on Medical Economics, presented the names of the following physicians as members of his Committee: Drs. Samuel A. Brown, Arthur F. Chace, Grant C. Madill, Henry G. Webster. Moved, seconded and carried that they be approved.

Dr. Joshua M. Van Cott, Chairman of the Committee on Public Health and Medical Education, presented the following names of physicians as members of his Committee: Drs. Allen A. Jones, Charles Stover, William G. Bissell, William P. Pool, Linsly R. Williams, John M. Swan, Luzerne Coville, Henry E. Clarke. Moved, seconded and carried that they be approved.

Dr. Frederic E. Sondern, Chairman of the Committee on Medical Research, presented the following names as members of his Committee: First District—Samuel A. Brown, Floyd M. Crandall, B. Farquhar Curtis, Alvah H. Doty, Haven Emerson, James Ewing, Simon Flexner, W. Stanton Gleason, William P. Healy, Alfred F. Hess, Samuel W. Lambert, William H. Park, James E. Sadlier, H. Ernest Schmid, J. Bentley Squier, John S. Thacher, S. W. S. Toms, Henry Lyle Winter, Francis Carter Wood. Second District—Elias H. Bartley, William F. Campbell, J. Richard Kevin, John C. MacEvitt, Frank Overton, Joshua M. Van Cott. Third District—Hermon C. Gordinier, Albert VanderVeer, Sherwood V. Whitbeck. Fourth District—George F. Comstock, Grant C. Madill, Charles Stover. Fifth District—T. Wood Clarke, Charles B. Forsyth, Hersey G. Locke, A. Walter Suiter. Sixth District—Arthur W. Booth, Luzerne Coville, R. Paul Higgins. Seventh District—Robert M. Elliott, Wesley T. Mulligan, Ethan A. Nevin, G. Kirby Collier. Eighth District—Harvey R. Gaylord, Matthew D. Mann, Nelson G. Richmond, Charles G. Stockton, Bernard F. Schreiner, Herbert U. Williams. Moved, seconded and carried that they be approved.

Dr. Syms, Chairman of the Committee on Scientific work stated that at the recent meeting of that Committee, a resolution had been passed that the section on Surgery hold its meeting on "War and Reconstructive Surgery" on Wednesday, and that a feeling had prevailed that this resolution carried with it the abandoning of the programs which the other sections had already arranged for Wednesday. This would practically make a "one day" meeting for the sections and do away with the section plan, which has proved so successful at former meetings. Dr. Syms requested that the Council take action in regard to the matter.

The Secretary read the following letter from Dr. vander Bogert, Chairman of the Section on Pediatrics:

> My dear Dr. Crandall:
>
> I was very glad to have your letter of November 26th. I now, however, hardly know how to proceed with my program. Without the Wednesday afternoon Session we have more papers promised than we can use. I understand that the Wednesday morning Sessions are not to be interfered with. Cannot the Committee on Scientific Work straighten matters out? I shall be anxious to know whether any further action has been taken. Very sincerely yours,
>
> (Signed) Frank vander Bogert.

Moved by Dr. Murray that the Chairman of the Committee on Scientific Work be directed to take the matter up with Dr. vander Bogert and have him arrange his program for Wednesday.

The Secretary stated that he felt that the Sections should be allowed to carry out their programs as arranged for Wednesday.

Dr. Sondern seconded the Secretary in this view.

The Chair then stated that Dr. Murray's motion was before the Council for action.

Dr. Dunning suggested that Dr. Murray's motion be left to the Chairman of the Committee on Scientific Work.

Dr. Murray withdrew his motion.

Moved by Dr. Van Fleet, seconded by Dr. Lytle and carried, that the Chairman of the Committee on Scientific Work write to the Chairmen of the Sections and suggest that they carry out their programs as usual.

Moved, seconded and carried that the President of the State Society appoint a certain number of speakers to bring before the House of Delegates the matter of reporting venereal diseases.

Moved, seconded and carried that the Counsel of the State Society be requested to write an opinion concerning the constitutionality of the law requiring the reporting of venereal diseases, this opinion to be published in the New York State Journal of Medicine.

The question of the advisability of establishing a Legislative Bureau of Information at Albany was discussed.

Moved, seconded and carried that Dr. Kosmak be given the privilege of the floor to present his plans for such a Bureau.

Dr. Sondern moved that the Chair appoint a Committee to report at the next meeting of the House of Delegates in regard to the establishment of a Legislative Bureau of Information at Albany, and if established that it include prominent men connected with the Rockefeller Foundation and other institutions of a similar nature, who would be willing to appear before the Legislature, if needed.

Moved that the motion be amended so that the Chairmen of the Committees on Legislation, Public Health, and Medical Economics be included in this Committee and such other members as the President may appoint.

Motion as amended seconded and carried.

Moved, seconded and carried that the Council requests the President to appoint a committee to confer with the State Education Department, for the purpose of furthering prosecution of illegal practitioners.

There being no further business the meeting adjourned.

Floyd M. Crandall,
Secretary.

Legislative Notes

The Medical Society of the State of New York herewith presents the list of members of the Senate and Assembly for the year 1919. Members of the Society can refer to this list at any time that it may seem advisable to write to their Assemblymen or Senators in regard to legislative matters. All are requested to look it over so that if there are any known to them personally they can write to them, if requested, to assist or oppose any bills before the Legislature.

SENATE.

1. *George L. Thompson, R., Kings Park.
2. Frank Adel, D., Long Island City.
3. Peter J. McGarry, D., Long Island City.

KINGS.

4. Kenneth F. Sutherland, D., 2834 W. 1st St.
5. Daniel F. Farrell, D., 378 17th St.
6. Loring M. Black, Jr., D., 606 Lincoln Pl.
7. *Charles C. Lockwood, R., 954 Greene Ave.
8. *Alvah W. Burlingame, Jr., R., 96 Hancock St.
9. *Charles E. Russell, D., 246 Jamaica Ave.
10. Jeremiah F. Twomey, D., 151 Java St.
11. *Daniel J. Carroll, D., 135 No. Third St.

NEW YORK.

12. *James J. Walker, D., 6 St. Luke Pl.
13. *John J. Boylan, D., 418 W. 51st St.
14. *Bernard Downing, D., 306 E. Broadway.
15. Abraham Kaplan, D., 304 W. 104th St.
16. *James A. Foley, D., 316 E. 18th St.
17. Julius Miller, D., 19 E. 98th St.
18. *Salvatore A. Cotillo, D., 235 E. 116th St.
19. *Edward J. Dowling, D., 230 W. 130th St.
20. William C. Dodge, D., 365 Edgecomb Ave.

BRONX.

21. Henry G. Shackno, D., 360 E. 166th St.
22. Peter A. Abeles, R., 941 Simpson St.
23. *John J. Dunnigan, D., 1861 Holland Ave.

STATE.

24. John A. Lynch, D., West New Brighton.
25. George T. Burling, R., White Plains.
26. Walter W. Law, Jr., R., Briarcliff.
27. Caleb H. Baumes, R., Newburgh, 67 Farrington St.
28. *James E. Towner, R., Towners.
29. *Charles W. Walton, R., Kingston, 23 Pearl St.
30. *Henry M. Sage, R., Menands.
31. John J. Mackrell, D., Troy, 553 Second Ave.
32. *James W. Yelverton, R., Schenectady, 217 Union St.
33. Mortimer Y. Ferris, R., Ticonderoga.
34. *N. Monroe Marshall, R., Malone.
35. Burt Z. Kasson, R., Gloversville.
36. Frederick M. Davenport, R., Clinton.
37. *Fred B. Pitcher, R., Watertown, 228 Mullin St.
38. *J. Henry Walters, R., Syracuse, 315½ W. Genesee St.
39. *Adon P. Brown, R., Leonardsville.
40. Clayton R. Lusk, R., Cortland, 38 W. Court St.
41. Seymour Lowman, R., Elmira, 614 Euclid Ave.
42. *Charles J. Hewitt, R., Locke.
43. *William A. Carson, R., Rushville.
44. *John Knight, R., Arcade.
45. James L. Whitley, R., Rochester, 189 Barrington St.
46. *John B. Mullan, R., Rochester, 217 Wellington Ave.
47. *George F. Thompson, R., Middleport.
48. *Ross Graves, R., Buffalo, 68 Manchester Pl.
49. *Samuel J. Ramsperger, D., Buffalo, 232 Emslie St.
50. *Leonard W. H. Gibbs, R., Buffalo, 15 Depew Ave.
51. *J. Samuel Fowler, R., Ashville.

*Re-elected.

ASSEMBLY.

ALBANY.

1. *Clarence F. Welsh, R., 43 S. Allen St., Albany.
2. *John G. Malone, R., 8 Wendell St., Albany.
3. *James M. Gaffers, R., Latham.

ALLEGANY.

*William Duke, Jr., R., Wellsville.

BRONX.

1. *Earl H. Miller, D., 834 Eagle Ave.
2. *Edward J. Flynn, D., 29 Alexander Ave.
3. Robert T. Mullen, D., 524 Wales Ave.
4. M. Malden Fertig, D., 1389 Stebbins Ave.
5. William S. Evans, D., 1018 E. 163d St.
6. *Thomas J. McDonald, D., 876 E. 224th St.
7. *Joseph V. McKee, D., 890 E. 176th St.
8. *J. Fairfax McLaughlin, D., 251 E. 200th St.

BROOME.

1. *Edmund B. Jenks, R., Whitney Point.
2. *Forman E. Whitcomb, R., Union.

CATTARAUGUS.

*De Hart H. Ames, R., Franklinville.

CAYUGA.

*L. Ford Hager, R., Red Creek.

CHAUTAUQUA.

1. *Hermes L. Ames, R., Falconer.
2. *Joseph A. McGinnies, R., Ripley.

CHEMUNG.

*John J. Richford, R., Elmira.

CHENANGO.

*Bert Lord, R., Afton.

CLINTON.

*Wallace E. Pierce, R., Plattsburgh.

COLUMBIA.

John W. Scott, R., Copake.

CORTLAND.

Irving F. Rice, R., Cortland, R. D. 6.

DELAWARE.

Lincoln R. Long, R., New Kingston.

DUTCHESS.

1. J. Griswold Webb, R., Clinton Corners.
2. *Frank L. Gardner, R., Poughkeepsie.

ERIE.

1. George E. D. Brady, R., 110 Franklin St., Buffalo.
2. *John W. Slacer, R., 1203 West Ave., Buffalo.
3. *Nicholas J. Miller, R., 12 Cayuga St., Buffalo.
4. Charles H. Roth, D., 986 Clinton St., Buffalo.
5. *Alex. A. Patrzykowski, D., 1119 Broadway, Buffalo.
6. *George H. Rowe, R., 472 Ellicott Sq., Buffalo.
7. *Herbert A. Zimmerman, R., Kenmore.
8. *Nelson W. Cheney, R., Eden.

ESSEX.

*Raymond T. Kenyon, R., Ausable Forks.

FRANKLIN.

*Warren T. Thayer, R., Chateaugay.

FULTON AND HAMILTON.

Eberly Hutchinson, R., Green Lake.

GENESEE.

Charles P. Miller, R., South Byron.

GREENE.

*Harding Showers, R., Tannersville.

HERKIMER.

*Edward O. Davies, R., Ilion.

JEFFERSON.

*Henry E. Machold, R., Ellisburg.

KINGS.

1. John J. Griffith, D., 126 Schermerhorn St.
2. Thomas J. Cox, D., 2025 E. 16th St.
3. *Frank J. Taylor, D., 50 Van Dyck St.
4. *Peter A. McArdle, D., 151 Hewes St.
5. *James H. Caulfield, Jr., R., 872 Madison St.
6. Martin Solomon, D., 126 Vernon Ave.
7. John J. Kelly, D., 565 65th St.
8. Edward J. Flanagan, D., 275 Carroll St.
9. *Frederick S. Burr, D., 8223 Ridge Blvd.
10. *Hoxie W. Smith, D., 19 Prospect St.
11. Daniel J. Lyons, D., 714 Sterling Pl.
12. *Albert Link, D., 483 8th St.
13. *Morgan T. Donnelly, D., 101 Power St.
14. Joseph Lentol, D., 268 Grand St.
15. Christian J. McWilliams, D., 110 Milton St.
16. David Dreschler, D., 8636 21st Ave.
17. *Frederick A. Wells, R., 1339 Bedford Ave.
18. Charles C. Johnson, D., 1468 Union St.
19. *Benjamin C. Klingman, D., 144 Irving Ave.
20. *George J. Braun, D., 149 Bleecker St.
21. *Wilfred E. Youker, R., 310 Kenmore Pl.
22. *James J. Morris, D., 2244 Pitkin Ave.
23. Charles Solomon, S., 40 Topscott St.

LEWIS.

*Albert A. Copeley, R., Lowville.

LIVINGSTON.

*George F. Wheelock, R., Leicester.

MADISON.

*Morell E. Tallett, R., DeRuyter.

MONROE.

1. *James A. Harris, R., Penfield.
2. *Simon L. Adler, R., 17 Argyle St., Rochester.
3. *Harry B. Crowley, R., Alexander St., Rochester.
4. *Frank Dobson, R., Greece.
5. *Franklin W. Judson, R., Gates.

MONTGOMERY.

Alton A. Walrath, R., Fort Plain.

NASSAU.

1. *Thos. A. McWhinney, R., Lawrence.
2. *Franklin A. Coles, R., Glen Cove.

NEW YORK.

1. *Peter J. Hamil, D., 262 William St.
2. *Caesar B. F. Barra, D., 57 Kenmare St.
3. *Peter P. McElligott, D., 360 W. 21st St.
4. Samuel Dickstein, D., 304 E. Broadway.
5. *Charles D. Donohue, D., 435 W. 43rd St.
6. Sol Ullman, R., 268 7th St.
7. Mary M. Lilly, D., 1947 Broadway.
8. Herman Weiss, R., 76 St. Marks Pl.
9. Philip A. Walter, D., 311 W. 95th St.
10. William W. Pellet, R., 28 E. 28th St.
11. Leo A. Kahn, D., 218 W. 113th St.
12. *Martin G. McCue, D., 734 Third Ave.
13. John J. Cronin, D., 520 W. 123rd St.
14. *Mark Goldberg, D., 240 E. 69th St.
15. Joseph Steinberg, R., 17 E. 97th St.
16. *Maurice Bloch, D., 407 E. 88th St.
17. *August Claessens, S., 1402 Fifth Ave.
18. *Owen M. Kiernan, D., 163 E. 89th St.
19. Martin J. Healy, D., 27 W. 129th St.
20. *Charles A. Winter, D., 54 E. 129th St.
21. John C. Hawkins, R., 228 W. 137th St.
22. *Earle A. Smith, D., 38 Fort Washington Ave.
23. Elliot Burston, D., 255 Fort Washington Ave.

NIAGARA.

1. *William Bewley, R., Lockport.
2. *Nich. V. V. Franchot, 2d, R., Niagara Falls.

ONEIDA.

1. H. W. Booth, R., 1668 Bennett St., Utica.
2. *Louis M. Martin, R., Clinton.
3. *George T. Davis, R., 106 Maple St., Rome.

ONONDAGA

1. *Manuel J. Soule, R., Euclid.
2. Gardner J. Chamberlin, R., 214 W. Borden Ave., Syracuse.
3. *George R. Fearon, R., 511 Van Buren St., Syracuse

ONTARIO.

*George M. Tyler, R., North Bloomfield.

ORANGE.

1. *William F. Brush, R., Newburgh.
2. *Charles L. Mead, R., Middletown.

ORLEANS

*Frank H. Lattin, R., Albion.

OSWEGO

*Thaddeus C. Sweet, R., Phoenix.

OTSEGO

*Allen J. Bloomfield, R., Richfield Springs.

PUTNAM.

*John P. Donohue, R., Garrison.

QUEENS

1. *Peter A. Leininger, D., Astoria.
2. Bernhard Schwab, D., Ridgewood.
3. *John Kennedy, D., Winfield.
4. John H. Maloy, Jr., D., Hollis.
5. *Albert J. Brackley, D., Far Rockaway.
6. *William O'Hare, D., Glendale.

RENSSELAER

1. *John F. Shannon, D., Troy.
2. *Arthur Cowee, R., Berlin.

RICHMOND

1. Thomas F. Curley, D., New Brighton.
2. *Henry A. Seesselberg, D., 12 Pierce St., Concord.

ROCKLAND.

*Gordon H. Peck, R., West Haverstraw.

ST. LAWRENCE.

1. *Frank L. Seaker, R., Gouverneur.
2. *Edward A. Everett, R., Potsdam.

SARATOGA.

Clarence C. Smith, R., Wilton.

SCHENECTADY.

1. *Walter S. McNab, R., 514 State St., Schenectady.
2. *A. Edgar Davies, R., 501 Lenox Rd., Schenectady.

SCHOHARIE.

Harry M. Greenwald, R., Cobbleskill.

SCHUYLER

*Hiram H. Graham, R., Beaver Dams.

SENECA.

*Lewis W. Johnson, R., Seneca Falls.

STEUBEN.

1. *Samuel E. Quackenbush, R., Corning.
2. Delavan C. Hunter, R., Canisteo.

SUFFOLK.

1. John G. Downs, R., Cutchogue.
2. Ida B. Sammis, R., Huntington.

SULLIVAN.

William J. Brown, R., Jeffersonville.

TIOGA.

*Daniel P. Witter, R., Berkshire.

TOMPKINS.

*Casper Fenner, R., R. D. 9, Ludlowville.

ULSTER.

*Joel Brink, R., Lake Katrine.

WARREN.

*Frank C. Hooper, R., North River.

WASHINGTON.

Eugene R. Norton, R., Cambridge.

WAYNE.

*Frank D. Gaylord, R., Sodus.

WESTCHESTER

1. *Bertrand G. Burtnett, R., Bronxville.
2. Walter W. Westall, R., White Plains.
3. Edward J. Wilson, R., Peekskill.
4. Charles Vezin, Jr., R., Yonkers.
5. *George Blakely, R., Yonkers.

WYOMING.

*Bert P. Gage, R., Warsaw.

YATES.

*James Monroe Lown, Jr., R., Penn Yan.

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*Re-elected.

Committee on Prize Essays

The Committee on Prize Essays is very desirous that this year, competitors will send in papers.

So much has taken place on new and original lines during the last four years of the war that from an intensive study of literature, much can be put in a form that will be of lasting benefit to the profession.

The Laboratory has been of inestimable service in prevention of disease, as the statistics of typhoid, malaria, influenza, etc., show. The army of occupation has a lower mortality than the same numbers at home.

Albert Vander Veer, *Chairman.*
Edward D. Fisher.
Charles G. Stockton.

County Societies

MEDICAL SOCIETY OF THE COUNTY OF LIVINGSTON.

Regular Meeting, Geneseo.
Tuesday, December 17, 1918.

Owing to the influenza epidemic the time of holding the regular annual meeting, was postponed until December 17th.

The meeting was called to order at 6:30 P. M. at the Big Tree Inn, Francis V. Foster, M.D., President, presiding. The following Doctors were present: Francis V. Foster, Roy A. Page, Axel E. Engzelius, Walter E. Lauderdale, Weldon K. McGowan, William T. Shanahan, Judson M. Burt and G. Kirby Collier.

The minutes of the last regular meeting held at Dansville on August 16, 1918, were read. Moved, seconded and carried that they be approved as read.

At the August meeting the following nominations for officers were made: Arthur L. Shaw, M.D., of Sonyea, President; Frederick A. Wicker, M.D., of Livonia, Vice-President; G. Kirby Collier, M.D., of Sonyea, Secretary-Treasurer. Censors: Frederick J. Bowen, M.D., of Mt. Morris; Walter E. Lauderdale, M.D., of Geneseo; John P. Brown, M.D., of Nunda; Frederick R. Driesbach, M.D., of Dansville; Frederick A. Wicker, M.D., of Livonia.

It was moved by William T. Shanahan, M.D., and seconded by Walter E. Lauderdale, M.D. that the Secretary be instructed to cast one ballot for the election of these officers.

The Secretary informed the Society of the transfer to membership in the Livingston County Society of LeGrand A. Damon, M.D. formerly a member in good standing of the Niagara County Society.

Communications were read from the Council of National Defense and from the Committee on Medical Economics.

The Treasurer read the financial report showing how the dues of all but one member had been paid for the year 1918.

The dues of those members of the Society who are now members of the Medical Reserve Corps of the United States Army, were paid from the County funds as per resolution of January 10, 1918. There was considerable discussion relative to the payment of these dues now that the Armistice Terms have been signed, and on motion of William T. Shanahan, M.D., seconded by Walter E. Lauderdale, M.D., the following resolution was unanimously adopted:

Resolved, That the Secretary-Treasurer of the Medical Society of the County of Livingston be instructed to pay the state assessment of those members of the Society who are in the service of the United States Army and serving beyond the confines of the continental United States.

The Secretary-Treasurer announced the death of Walter E. Gregory, M.D., of Dansville, and James F. Munson, M.D. of Sonyea.

It was moved, seconded and carried that a committee consisting of Drs. Judson M. Burt, Roy A. Page, and G. Kirby Collier, be instructed to forward suitable resolutions to the families of these two deceased members.

The recent influenza epidemic was the topic of discussion at this meeting, each member present giving a report of the conditions in his community.

The next meeting of the Society will be held at Avon the first Tuesday in February.

MEDICAL SOCIETY OF THE COUNTY OF ORANGE.

Annual Meeting, Goshen.
Tuesday, December 3, 1918.

The meeting was called to order in the County Court House by the President, Edgar G. Cuddeback, M.D.

After reading the minutes of the last meeting the reports of the Secretary, Treasurer and Committee Minora were received and accepted.

On motions regularly made, seconded and carried, the following officers were elected for the ensuing year: President, William H. Snyder, M.D., Newburgh; Vice-President, Burke C. Hamilton, M.D., Goshen; Secretary, Milton A. McQuade, M.D., Newburgh; Treasurer, Hilton J. Shelley, M.D., Middletown; Censors: Daniel B. Hardenbergh, M.D., Middletown; Ralph L. McGeoch, M.D., Goshen; Edward C. Rushmore, M.D., Tuxedo Park; Henry B. Swartwout, M.D., Port Jervis; Delegate to the State Society, John I. Cotter, M.D., Maybrook. Alternates: Milton A. McQuade, M.D., Newburgh and Walter W. Davis, M.D., Chester.

The President appointed the following committees for 1919: On Public Health, George O. Pobe, M.D., Port Jervis; Percy E. Banks, M.D., Newburgh; Edward C. Thompson, M.D., Cameron; and Archie B. Chappell, M.D., Middletown. On Legislation: Henry Lyle Winter, M.D., Cornwall; Charles E. Townsend, M.D., Newburgh; Joseph B. Hulett and Edward G. Cuddeback, M. D., Port Jervis.

Moved, seconded and carried that the President appoint a committee of three or five members to attend the meeting of the First District Branch.

The President appointed John I. Cotter, M.D., Henry Lyle Winter, M.D., Edward G. Cuddeback, M.D., Albert W. Preston, M.D., and John T. Howell, M.D.

Earl R. Van Amburg, M.D., of Pine Bush, was elected a member of the Society and Harrison F. Murray, M.D., was declared a member by transfer from the Medical Society of the County of Kings.

Hilton J. Shelley, M.D., moved that the President appoint committees to draft resolutions on the deaths of Drs. Isaac H. Lent, of Middletown and Henry T. Kurtz, of Highland Falls. Carried. The President appoints Drs. Shelley and Hardenbergh to draft resolutions on the death of Dr. Lent, and Drs. Howell and Carr to draft resolutions on the death of Dr. Kurtz. These resolutions to be presented at the next meeting.

Following the business session a paper on Influenza was read by Frank W. Laidlow, M.D., of Hurleyville, a member of the State Department of Health. The discussion was opened by W. Stanton Gleason, M.D., of Newburgh.

A vote of thanks was tendered Dr. Laidlow for his interesting paper.

THE ONONDAGA MEDICAL SOCIETY.

Annual Meeting, Mizpah Hotel, Syracuse.
Tuesday, December 10, 1918.

The following officers were elected for the ensuing year: President, Frederick H. Flaherty, M.D., Syracuse; vice-president, Harry J. Brayton, M.D., Syracuse; secretary, George S. Reed. M.D., Syracuse; treasurer, Raymond J. Stoup, M.D., Syracuse; censors, John C. Shoudy, M.D., Syracuse; Edward B. Jones, M.D., Syracuse.

SCIENTIFIC SESSION.

"The Therapeutic Use of Bromides," by Joseph R. Wiseman, M.D., of Syracuse.

"A Clinical Study of Aortitis," by I. Harris Levy, M.D., of Syracuse.

"Pathology of Superficial Burns," by Herman G. Weiskotten, M.D., of Syracuse.

Books Received

The Unsound Mind and the Law. A Presentation of Forensic Psychiatry by George W. Jacoby, M.D., author of Child Training as an Exact Science, Fellow American Medical, American Neurological Associations, Consulting Neurologist Hospital Nervous Diseases. Funk & Wagnalls Company: New York, London, 1918. Price $3 net.

A Text Book of Home Nursing. Modern Scientific Methods for the Care of the Sick. By Eveleen Harrison. Second Edition Revised. Published by the MacMillan Company, New York. 1918. Price $1.10.

Clinical Medicine for Nurses. By Paul H. Ringer, A.B., M.D. Member of staff Asheville Mission and Biltmore Hospitals. Illustrated. F. A. Davis Co., Philadelphia in 1918.

Physician's Visiting List for 1918. Sixty-eighth year of publication. Philadelphia. P. Blakeston's Son & Co. Price $1.25.

The Medical Clinics of North America. Volume II, Number 1. (New York Number, July, 1918.) 311 pages, 57 illustrations. Philadelphia and London: W. B. Saunders Co., 1918. Published bi-monthly. Price per year: Paper, $10; cloth, $14.

Equilibrium and Vertigo. By Isaac H. Jones, M.A., M.D. Laryngologist, Philadelphia General Hospital; Instructor Neuro-Otology, University Pennsylvania; Major M.R.C., U. S. A. With an analysis of Pathologic Cases by Lewis Fisher, M.D. Laryngologist and Otologist, Mt. Sinai Hospital, Philadelphia. Adopted as standard for Medical Division, Signal Corps, Aviation Section, by Surgeon General and Chief Signal Officer, U. S. A. With 130 illustrations. J. B. Lippincott Co.: Philadelphia and London, 1918. Price $5.

Negro Population, 1790-1915. Department Commerce, Bureau of Census. Sam L. Rogers, Director. Government Printing Office, 1918.

Johnson's Standard First Aid Manual. Suggestions for prompt aid to the Injured in Accidents and Emergencies. Edited by Fred B. Kilmer, in collaboration with eminent surgeons, first aid authorities and specialists. Illustrated. Eighth edition, revised. Published by Johnson & Johnson, New Brunswick, N. J., U. S. A.

Surgical Treatment. A Practical Treatise on the Therapy of Surgical Diseases for the Use of Practitioners and Students of Surgery. By James Peter Warbasse, M.D. Fellow American College of Surgeons, American Medical Association, American and New York Academies of Medicine, Surgeon Wyckoff Heights Hospital, Brooklyn. Three volumes, 2,400 illustrations. Volume II. W. B. Saunders Company: Philadelphia and London. Cloth $30 per set.

The Human Skeleton, an Interpretation. By Herbert Eugene Walter, Associate Professor Biology, Brown University. 214 pages, 175 illustrations. 12mo. New York: Macmillan Co., 1918. Cloth, $1.75.

An Enquiry Into the Analytical Mechanism of the Internal Ear. By Sir Thomas Wrightson, Bart. With an Appendix on the Anatomy of the Parts Concerned, by Arthur Keith, M.D., F.R.S. 254 pages. Illustrated. 8vo. London and New York: Macmillan Company, 1918. Cloth, $4.50.

Hysterical Disorders of Warfare. By Lewis R. Yealland, M.D. 252 pages. 8vo. London and New York: Macmillan Company, 1918. Cloth, $2.75.

Medical Contributions to the Study of Evolution. By J. G. Adami, M.D., F.R.S., F.R.C.P. 372 pages. Illustrated. 8vo. New York: The Macmillan Company, 1918. Cloth, $6.

Book Reviews

Forced Movements, Tropisms and Animal Conduct. By Jacques Loeb, M.D., Ph.D., D.Sc., Member of the Rockefeller Institute for Medical Research. 205 pages, 42 illustrations. J. B. Lippincott Company, Publishers. Philadelphia and London, 1918. Cloth, price, $2.50 net.

This is the first of a series of monographs, by different authors, on experimental biology and physiology. The publishers are to be congratulated as the first to see the present trend of this department of science and, in this venture, to supply books giving a strictly experimental treatment of such subjects. Whoever desires to keep in close touch with recent physiological progress will be obliged to study these volumes. In choosing Dr. Loeb's favorite subject with which to start the series they have displayed considerable courage as it is, probably, the most radical of the series in its relationship to traditional opinion, and holds, unreservedly, to the view that "the conduct of animals consists of forced movements." As, during the electric decomposition of a salt, the acid radical must go to one pole and the basic to the opposite pole, so organisms, when under the sway of positive galvanotropism, must go in an opposite direction to that which they would if controlled by negative galvanotropism. "The analysis of animal conduct," he says, "only becomes scientific in so far as it drops the question of purpose and reduces the reactions of animals to quantitative laws." His meaning of the word "purpose" becomes evident when he tells us that "What appeared to the older authors as the expression of fondness for light or for darkness was . . . . the expression of an influence of light upon the relative tension of symmetrical muscles." In Hammond's heliotropic machine, that is directed in its movement by light acting on selenium cells, he sees proof that insects are just as purely mechanical in their movements, under control of the same agent. Nor does he stop here for he assures us that "What has been stated for light holds true also if light is replaced by any other form of energy," for while "motions caused by light or other agencies appear to the layman as expressions of will and purpose on the part of the animal, whereas in reality the animal is forced to go where carried by its legs." When animals perform instinctive acts they are due to tropisms for "the theory of tropisms is at the same time the theory of instincts, if due consideration is given to the role of hormones in producing certain tropisms and suppressing others." When mind enters into the problem memory takes the place of hormones and "a memory image is not a 'spiritual' but a physical agency." These memory images, he tells us, "can vary and multiply the number of possible tropistic reactions." This extension of the tropism theory to memory he thinks "may explain why higher animals and human beings seem to possess freedom of will, although all movements are of the nature of forced movements."

All such reasoning relegates consciousness into the position of an inefficient epi-phenomenon. In its absence within himself Dr. Loeb would have been just as efficient an author, if his logic is sound, and all the myriads of events that have transpired during the war just ended, could have occurred without anyone knowing anything about it. Nature built on unconsciousness could have reached as great efficiency as she has with consciousness, if he is right. "When the burnt child draws its hand back from the flames," says Prof. Jennings, of Johns Hopkins University, "does the state of consciousness called pain have anything to do with the reaction?". Why did Dr. Loeb fail to answer this question which has been before him many years? When hunger impels the movements of our legs to the dining table memory images of a coming feast may start the tropistic actions of the muscles but in the absence of the sensation of hunger few would be willing to do a hard day's work to get the money to pay for the meal. Jennings says that anyone "who holds that pain is a necessary link in the chain of events in man must consider that we are undertaking a hopeless task in trying to account for the reactions of the lower organisms purely from the chemical and physical conditions. And the converse is also true." We think Loeb should accept Herbert Spencer's reconciliation of this difficulty by seeing that behind that which we call matter and energy is a something which "is the same as that which, in consciousness, is manifested as Feeling and Thought."

R. G. E.

Surgery of the Spine and Spinal Cord. By Charles H. Frazier, M.D., Sc.D., with the collaboration of Alfred Reginald Allen, M.D. Illustrated. Plates. 971 pp. 8vo. New York and London: D. Appleton & Company, 1918. Cloth, $8.00.

The monograph is one of the most important forms of present day literature on medical subjects, particularly in an age when specialization is being developed to a superlative degree. It is a most convenient and practical reference for the busy physician and surgeon, and tends to emphasize the value of specific groups of conditions.

A recent acquisition to our material—Frazier's book on "Surgery of the Spine and Spinal Cord," is a volume always meeting a definite need when coming from the pen of an unquestionable authority of so long standing. Every phase of the book is discussed in great detail and one finally wonders if some of the elaboration could not be eliminated to advantage, decreasing somewhat the size of the volume without subtracting from its merit and purpose.

A work of this nature does not demand a resumé of anatomy and physiology incorporated between its covers. Those fundamentals are at hand for ready reference on every practitioner's bookshelf.

It would seem that one of the essential elements of the monograph should be to make its size easy of manual manipulation wherever this can be accomplished without sacrificing practical data bearing directly on the issues discussed.

Recent monographs from men like Frazier, Cushing, Elsberg, and other men of similar rank, should stimulate more contributions of this type of work from men in the different branches of medicine and surgery.

H. G. Dunham.

The Orthopedic Treatment of Gunshot Injuries. By Leo Mayer, M.D., Instructor Orthopedic Surgery, N. Y. Post-Graduate Medical School; introduction by Col. E. G. Brackett, M.C.N.A., Dir. Military Orthopedic Surgery. 12mo., of 250 pages, with 184 illustrations. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, $2.50 net.

This volume is dedicated to all who by word or deed are striving to aid the cause of the crippled soldier.

It deals with war injuries and the prevention and cure of deformities from these injuries. It is essentially practical from cover to cover.

While especially valuable to the surgeon engaged in the reconstruction and rehabilitation of the wounded soldier it, nevertheless, has much of value to the general surgeon in civil practice.

It deals with fractures and injuries to joints, nerves, muscles, bone, tendons and cutaneous tissues. The treatment of contractures, tendon transplantations and nerve suturing are taken up. There is a lengthy discussion of the fitting of artificial limbs and of the various kinds available.

The aims and organization of the orthopedic reconstruction hospital are outlined.

Any one interested in these subjects will be well repaid for the time spent in reading this book.

Henry F. Graham.

Gymnastic Treatment for Joint and Muscle Disabilities. By Brevet Col. H. E. Deane, R.A.M.C., in charge of War Hospital, Croydon, with preface by Temp. Col. A. Carless, Army Medical Service. Consulting Surgeon, Eastern Command, and by Brevet Lieut. Col. F. W. Mott, F.R.S., R.A.M.C. (T.), Maudsley Hospital, Denmark Hill. London: Henry Frowde. Hodder & Stoughton, Oxford University Press. New York, 1918.

This book is a product of the war. It presents to us a new and interesting amount of information on "Gymnastic Treatment for Joint and Muscle Disabilities." In the near future many gymnasiums such as those described will be required.

The medical profession and the public are indebted to Colonel Deane for working out and organizing this gymnastic scheme.

Harry R. Tarbox.

The Prevention of Venereal Diseases. By Otto May, M.A., M.D. (Cantab.) M.R.C.P. (London); Late Hon. Secretary, National Council for Combating Venereal Diseases. London: Henry Frowde, Hodder & Stoughton, Oxford University Press, Warwick Square, E. C. 35 W. 32d St., N. Y. City. 1918. Price, $3.00.

The volume is divided into six chapters and four appendices. The first appendix is a lecture on venereal diseases to troops, the second gives a list of institutions in England and Wales available for the free diagnosis and treatment of venereal diseases, the third is a copy of the venereal disease act of Great Britain, and the fourth gives the New Zealand social disease act.

The work is well worth reading by every Army and Naval Medical Officer.

W.

Deaths

Wesley M. Adams, M.D., Schenevus, died October 15, 1918.

Samuel Brothers, M.D., Brooklyn, died December 18, 1918.

Arthur H. Brown, M.D., Auburn, died December 19, 1918.

Louis W. Burdick, M.D., Maryland, died October 21, 1918.

David C. Carr, M.D., New York City, died December 7, 1918.

Charles E. Collins, M.D., Rensselaer, died October 14, 1918.

William F. Conway, M.D., Albany, died November 1, 1918.

James E. Culbert, M.D., Buffalo, died October 26, 1918.

George Edward Fell, M.D., Chicago, Ill., died July 29, 1918.

Walter E. Gregory, M.D., Dansville, died October 26, 1918.

Frank W. Jackson, M.D., New York City, died January 8, 1919.

Austin LaMonte, M.D., Carmel, died November 9, 1918.

Isaac H. Lent, M.D., Middletown, died about October 20, 1918.

Harry S. Marcley, M.D., New York City, died November 18, 1918.

William B. Melick, M.D., Fort Edward, died November 3, 1918.

John Millington, M.D., Greenwich, died November 3, 1918.

Martin F. Nolan, M.D., North Tonowanda, died, 1918.

Albert F. Ostwald, M.D., Buffalo, died November 8, 1918.

Frank Townsend Stannard, M.D., Troy, died October 29, 1918.

Charles B. Tefft, M.D., Utica, died October 31, 1918.

Clarence H. White, M.D., Cohoes, died November 12, 1918.

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

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Vol. XIX. FEBRUARY, 1919 No. 2

EDITORIAL DEPARTMENT

THE IMPORTANCE OF SECURING NEW MEMBERS

THE society has successfully passed through one of the most trying periods in its history, for the war brought new and grave problems. Hundreds of the members were out of the State in government service. At the beginning of 1918, those selected to guide the financial and scientific affairs looked forward with apprehension. The year before a deficit had occurred, owing to the sudden increased cost of everything and to the action of the House of Delegates in making large appropriations for war and other measures. It was feared by the officers that an equally large deficit would occur, regardless of every effort at economy. A deficit did occur, but it was less than one-third that of 1917.

Increase in cost has occurred at every point: printing, paper, stationery, office supplies, postage, railroad fares, salaries of office force. Notwithstanding these sources of increased expense, there would have been an actual though small surplus, except for one condition: the admission of new members was reduced from a recent average of 678 to 326, with a corresponding loss of income. It seems certain that the cost of many of the items mentioned is not going to be immediately diminished. Economy will still be necessary.

One avenue is open by which we can secure a small surplus this year, namely, a return to the normal number of admissions. The deficits of the past two years have been easily met from the the surplus, leaving $8,741.00 of it intact. We have been able, as always, to pay bills at sight, and often to buy to advantage for cash. Our credit is better than ever.

The wisdom of securing this surplus has been fully vindicated. The credit is largely due to the foresight of Dr. Lambert during his twelve years of treasurership. It has been ample, but is small for a society of our size and annual expenditures. It was built up with wise appreciation that a rainy day might come, or an emergency arise. The emergency arose. We have gone through it and have emerged with a higher commercial standing than we ever had before.

It does not follow, however, because we have weathered this storm that we can go on indefinitely with deficits. The way seems clear by which we may go through another trying year and emerge with an even balance or a small surplus, without impairing our established activities.

That way is to increase the membership to the normal standard.

The efforts of President Tinker three years ago to increase the membership have borne their fruit in these two trying years. His efforts resulted in a net gain of over 700 members, and we had those to enter the war period with.

Fortunately, there has been no time for several years more propitious for a membership campaign. Much of the material lost last year is ready to be worked upon now. Decrease in new members was the fault of no one. It was due to uncertain and unprecedented conditions. Those conditions have now radically changed. The war is past and the profession as well as the country is fast settling into peace conditions. Medical men are rapidly returning, though many will be kept in the service for some time to come.

One of the most radical of all these changes is seen in the status of the recent medical graduate. He no longer goes from his hospital service overseas, but will seek a location for civil practice. The importance of gathering the young men of these two years into the medical societies is great. They should be brought into affiliation with the profession as soon as possible, to add their inflence and increase the weight of numbers in the battles that are confronting us. The new future is a perilous one for the profession and the welfare of the public. The demon of unrest is abroad and we need every educated, intelligent and steady man we can muster on our side. This is the principal reason for seeking to increase our membership, and hold what we have at the present moment. The financial reason looms large. Without funds our activities and influence will suffer. It is scarcely necessary to say that the officers of the society are not moved by commercial reasons, but they are in a position to know that weight of numbers and adequate income are two important requisites for the well-being of the society.

Another fact is of great importance: many physicians who before entering the service were not satisfied with their locations are taking advantage of their discharge from the army to settle afresh and are seeking this State. Within a few weeks not less than twelve such physicians have visited the office of the State secretary to inquire regarding reciprocity, or the requirements necessary to admit them to practice in New York. They have severed their old connections and feel that they have lost much of their former practice. The time is propitious for making a change and New York offers a most attractive field. The cities of the State, large and small, offer many inducements and seem particularly desirable to these men. This influx may add slightly to the congestion of the profession, but they are physicians of the highest type, personally and professionally. Courtesy begets courtesy, and it is the part of wisdom to accept newcomers in a friendly spirit and receive them into our societies.

It is a satisfactory fact that physicians once in the societies are practically permanent. Resignations without adequate cause, such as removal from the State or retirement from practice, are almost unknown. Since the amalgamation in 1905, the average annual loss of members for non-payment of dues has been 153, a most remarkable record. Hence the securing of new members is virtually a permanent asset to the county and State societies.

While an especial duty is laid on the officers of the county societies in increasing their membership, it is not confined to them. It is shared by every member, particularly at this juncture. Letters and circulars accomplish little. Personal invitation is vastly more effective. A personal visit to a physician who would make a desirable member, with an application blank and friendly assistance in aiding him to fulfil the requirements for membership, will rarely fail in securing a new member. This personal invitation by officers, committees or members is the most effective means of building up the membership now so sorely needed.

WILLIAM STANTON GLEASON.

Dr William Stanton Gleason, a former President of the Medical Society of the State of New York, died at his home in Newburgh on February 3, 1919, in his 59th year.

Dr. Gleason was a loyal member of the County and State Societies for many years and one of the most influential physicians of the Central Hudson Valley. He was a physician of unusual attainments, and the high esteem in which he was held was but a just recognition of his professional ability. His death brings profound sorrow and loss, not alone to his home and native city, but to the profession of the state.

Original Articles.

NITROUS OXID ANALGESIA IN LABOR.*

By RAYMOND C. COBURN, M.D.,
NEW YORK CITY.

WHILE one of the great aims of the profession has always been the alleviation and prevention of pain, it is only in comparatively recent years that this feature of confinement has received its proportionate consideration. Accepting it either as the curse of God, or as the blight of civilization, the mothers of the world have endured their travail, assuaged chiefly by the psychological effect of their expected reward. However, a new era for motherhood has dawned, and no longer can pain and suffering be considered a necessary accompaniment of labor.

In selecting means for relieving or preventing pain and suffering incident to labor full consideration should be given to the patient's usual and special physiology, as well as to physiological action of the means employed. Pregnancy throws an especially heavy burden upon the organs of elimination, and since the means employed for the relief of pain are in themselves toxic, special consideration ought to be given to the selection of the agents employed to relieve the parturient woman, lest the toxic burden superadded to the one she is already carrying be sufficient to impair or break down her natural defences. Difficulty is added to the complexity of the factors involved by the fact that the "margin of safety" of the parturient woman is an exceedingly hard matter to estimate. Pain and suffering are always compensated for with vital energy, so that a painful labor, *per se,* by so devitalizing the patient that destructive forces thereby gain and maintain the ascendency, is often responsible for a fatal termination, when the prognosis at the beginning of labor appeared to be promising. Besides, puerperal infection has not been entirely eliminated, so caution ought to be exercised in administering anything that further impairs, at this critical time, the patient's fighting forces against infection. And last, but not least, the welfare of the baby must be considered.

To me it is a very striking fact that the average surgical patient dreads the anesthetic, while practically every obstetrical patient is eager to take it. This suggests the idea that as publicists, as well as physicians, we ought to be interested in rendering this trying ordeal as free from suffering as possible so there will be no dread of a future delivery, especially such as will tend to prevent its recurrence. That the woman in labor does not demand to be relieved of her pain is no reason for not relieving her, when circumstances permit. That circumstances oftentimes do not permit of such relief should not lower the aim nor lessen the effort to do the maximum the circumstances do allow. Indeed, it may safely be postulated that asepsis is not possible of attainment in many cases, yet no one would dare advocate anything else than the maximum effort the circumstances permit, to secure it. Just what constitutes the maximum relief the circumstances allow in any particular case depends very much upon the obstetrician's point of view. Slowly but surely the idea is becoming dominant that while labor is a natural process it need not necessarily be accompanied by acute suffering. Analgesics are for the relief and the prevention of pain; then why not use them when pain in such an excruciating form is present? The surgeon does not allow his patients to endure the suffering that the obstetrician often complacently permits his patients to endure. The sacrifice required of motherhood is always very great, but it should not be permitted to be any greater than is necessary.

It is a strange and striking fact that the anesthetic properties of nitrous oxid, ether, chloroform and ethyl chlorid were discovered at about the same time, and in the "three score and ten years" that have since passed, although replete with invention and discovery, these four anesthetics stand today almost unchallenged, in their respective fields. "Twilight sleep" has had its day, and I believe accomplished a great deal of good, not because it was founded on a proper basis, but because it was so widely advertised and presented in such a spectacular manner—"dispensed," so to speak, from even department stores—that it caused expectant mothers everywhere to desire and to demand relief in their travail. The physician who did not use "twilight sleep" was widely importuned to furnish something else, which, in the parlance of trade, was "just as good." This clamorous and insistent demand from outside the profession for "twilight sleep," and the general demand from within the profession for something which was better, and with which to withstand this overwhelming and unscientific onslaught, gave a tremendous impetus to the use of nitrous oxid in labor.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 23, 1918.

The major use of nitrous oxid in labor is as an analgesic, and the general analgesia may be considered as the state wherein pain is assuaged or prevented without loss of consciousness, while the anesthesia is the next deeper state, including complete absence of pain and loss of consciousness. While these distinctions are not exact, they are practical.

Nitrous oxid analgesia should be instituted as soon as the contractions produce a decided pain, which is usually about the end of the first stage, placing the emphasis on the pain rather than on the stage. Intelligent patients will request it at the proper time.

First of all there must be an apparatus of some kind with which to administer nitrous oxid, and here is where my trouble begins. To paraphrase: as many anesthetists of many minds, as many apparatus of many kinds. This is so because, to administer nitrous oxid to the best advantage, a more or less complicated apparatus and outfit of cylinders are required, and yet it can be administered with a very simple apparatus and a single cylinder. Some of the more complicated apparatus have been designed more especially for the requirements of general surgery, where there is a prolonged administration, and so they are not adapted to the short, intermittent administrations for obstetrical analgesia; others are not adapted for self administration; some are too large and heavy, others are too expensive. The circumstances under which they are used likewise vary greatly: some are wanted for use in hospitals, others for the bedside, some for self-administration, others for an anesthetist. All of these, and yet other factors enter into the selection of appropriate apparatus. Finally, the kind of apparatus, and how and where used, enter into the technic of administration, so only the fundamental principles involved can be here considered.

The patient should be instructed how to cooperate. Upon the first indication of the contraction, announced either by the patient or detected by palpating the abdomen, the mask should be quickly applied and the patient take three deep and rapid inhalations of nitrous oxid, and at the end of the third inhalation hold her breath as long as possible and "bear down." This usually furnishes analgesia for a complete contraction.

It is quite essential that the patient hold her breath as long as possible, so that a sufficiency of nitrous oxid be absorbed, and not immediately exhaled. The "bearing down" not only augments the expulsive effort, but also increases the rapidity of the absorption of nitrous oxid.

The number of the inhalations of nitrous oxid is important, and should be regulated according to the requirements, no more being administered than is required to produce analgesia. After the required number of inhalations are taken the administration of nitrous oxid should be discontinued until the incipiency of the next contraction, when the same process is repeated.

The tendency is to give too many inhalations. Two deep inhalations, the last one held as long as possible, give quite a degree of analgesia with the average patient, and four such inhalations a pronounced analgesia. Try it on yourself, and be convinced. You can then talk more emphatically and convincingly to your patients.

I prefer to remove the mask at the end of the periodic administrations, as the patients appear to hold their breath longer when the analgesic is withdrawn; others recommend leaving the mask in position, shutting off the nitrous oxid and allowing the patient to inhale air until the contraction subsides, and then remove the mask.

Likewise there is a difference as to the type of inhaler employed. I prefer the face inhaler; some others recommend a nasal inhaler.

It is emphasized that the administration of nitrous oxid should be begun just as soon as there is an indication of the contraction, so that analgesia will be established before pain develops. It takes less of the analgesic to prevent pain than it does to abolish it. The "first on the job" has the advantage. This throughout is a race and a contest between the analgesia and the contraction. On the other hand, the analgesia must not be established too soon, else the analgesia will subside and pain will be experienced toward the end of the contraction, especially when the contractions have a slow onset.

Either an attendant or the patient may place the mask in position, and remove it at the end of the required number of inhalations, or loosen the spring that shuts off the gas, but of course nitrous oxid must be supplied to the bag. The McKesson and the Clark apparatus have automatic means for keeping the bags filled, and for preventing waste when the patient is not inhaling, and so are well adapted for self-administration. A dental face mask, cylinder yoke, bag, tubing, and a cylinder of gas constitute the simplest outfit for administering nitrous oxid. Such an outfit is light and compact, can be carried anywhere, is inexpensive and adapted for self-administration, provided some one keeps the bag properly filled with nitrous oxid. In the absence of a nurse, any adult that may be allowed in the room may be quickly instructed how to perform efficiently this very light task.

Self-administration is a psychological aid, as it directs the patient's mind to extraneous matters. Of course, there should be some oversight by a competent observer with self-administration, though this is the one form of administration where nature protects the patient from most all of the danger by relaxing the hand that holds the mask against the face as soon as anesthesia is established.

Five to twenty per cent of air or of oxygen may be admitted with the inhalations of nitrous oxid as a routine, or when indicated by the patient's color or susceptibilities. Most patients and assistants do not secure a tight fitting of the mask with the face, and so allow considerable air to be inspired around the edges of the mask. Whether any additional oxygen or air is needed to that which is thus ordinarily inspired depends upon the requirements in each individual case. Davis recommends periodical administrations of two inhalations of pure nitrous oxid, four per cent of oxygen on the third inhalation, with the oxygen increased up to twenty per cent for the three following inhalations. Now the apparatus he describes is not adapted to the fine oxygen differentiations that this indicates. These oxygen percentages are registered back on the machine, and between the register and the mask are a mixing chamber and a large tube which completely upset these percentages. The shut-off for the gases is a spring valve at the mask. At the end of the sixth inhalation, when the administration stops, the conduits are filled with 80 per cent nitrous oxid and 20 per cent oxygen, accepting the machine figures. Now the first two inhalations following are not pure nitrous oxid, for the conduits are filled with the 20 per cent oxygen mixture, although the indicator has been turned back to pure nitrous oxid. When the oxygen indicator is turned back and forth rapidly and frequently it does not mean that the patient inhales the percentage indicated, for it requires one or two inhalations after the indicator is changed to empty the apparatus of the previous mixture, considering the capacity of the conduits and the friction along the walls. The first inhalation, therefore, instead of being pure nitrous oxid, contains more oxygen—ordinarily several times more—than the third inhalation, which is supposed to be the beginning of the oxygen administration. When only four to six inhalations are administered, and the latter number is rarely exceeded, as much or more oxygen is administered with the first inhalation as with the last, although the indicator is manipulated to show no oxygen with the first two inhalations, 4 per cent with the third, and increased for the other inhalations. This illustrates what I have frequently emphasized, and that is, that oftentimes the percentage of oxygen indicated on the apparatus nowise indicates the percentage the patient inhales, and it is the percentage of oxygen the patient inhales that produces the physiological effect. It is true finely differentiated oxygen percentages produce a pronounced psychological effect, but that is upon the observer and reader, and not upon the patient.

When oxygen is administered in some quantity with the first inhalation or two analgesia is unnecessarily deferred, as there is sufficient oxygen in the mask and the patient's respiratory passages to render its routine administration at this stage unnecessary. However, if one wishes to give oxygen with these brief, intermittent administrations, and there are cases in which it is desirable, it is preferable to set the indicator at a fixed percentage (5 to 10 per cent), and not shift it. Of course, in prolonged analgesia, the percentage of oxygen must usually be 20 per cent or more, but prolonged analgesia and brief analgesia do not have the same oxygen requirements. Besides, the burden of administrative technic should be considered. Simplicity in this technic is effective, safe, and adapted to extensive use.

When nitrous oxid is administered only after the uterus has begun to contract, and then for only a few inhalations, very little, if any, nitrous oxid reaches the foetus, for the contracted muscle prevents nitrous oxid reaching the foetal circulation till the end of the contraction, and by that time most all of the nitrous oxid has been eliminated, as it leaves the blood stream about as rapidly as it enters it. Nevertheless, it is not advisable to allow the patient to be cyanosed. Give fewer inhalations, or dilute with air, and in very susceptible patients add oxygen (q. s.).

At first when the contractions are painful but ineffective, and the analgesia does not "work" well, a full dose of a good nerve sedative should be administered. This not only tends to change the character of the pain, but increases the efficiency of nitrous oxid as well.

When the contractions are very close together self-administration becomes more difficult, but still it can be used. When the head is passing over the perinaeum the analgesia should be continuous, and deepened into anesthesia if there is danger of a tear, as nitrous oxid analgesia will not prevent the pain of a deep laceration. Yet here is where obstetricians differ; some prefer the analgesia so that the patient can co-operate and not "bear down" too much, others the anesthesia, and still others a deep anesthesia with nitrous oxid and ether, or straight ether. Let me emphasize that chloroform should not immediately follow nitrous oxid analgesia. I have always been too much afraid of this sequence to try it, and recently my fears were confirmed by a private report from a hospital in New York, where it had been used, and found to be especially dangerous, a few drops only producing profound anesthesia. As a sequence to nitrous oxid analgesia, ether acts very quickly—about as quickly as chloroform does ordinarily—and is the preferred anesthetic, either as an adjuvant to nitrous oxid or as the sole anesthetic. Anesthesia is also required for the repair of the deeper lacerations.

For continuous analgesia, when the head is passing over the perinaeum, oxygen is preferable, yet it can be maintained (a short time) with air, added either with each inhalation or by allowing two or three inhalations of nitrous oxid and air, each in successive turns. This method of oxygenation, however, is not recommended; ether analgesia or anesthesia is preferable.

When oxygen is available, the mother should be given a few inhalations, alternated with the same number of air, for a minute or two, or longer, just as soon as the baby is born, and before the cord is tied. Especially should this be done if the baby is cyanotic. The superoxygenation following quickly affects the baby's circulation. Pure oxygen should not be administered continuously for any length of time, as it is irritating to the lungs.

Nitrous oxid analgesia combined with local anesthesia is admirable technic in Cæsarean section. The uterus is not sensitive, except to traction, and this can be avoided. The local infiltration is a matter of the surgical technic, and will be here dismissed with the observation that a syringe, a needle, and the solution are not all that are required to block off properly the traumatized area.

Nitrous oxid analgesia does not delay the progress of labor, but rather accelerates it. It slightly stimulates contraction of the uterus, and with the pain relieved the patient "bears down" with more force, thereby augmenting the expulsive effort. By preventing suffering it conserves the patient's vitality. With the patient's vitality conserved the contractions are stronger. Some estimate it shortens the duration of labor one-fourth to one-third. It does not irritate the respiratory passages, nor increase the burden on the excretory organs, already overtaxed, nor lower the patient's resistance against infection and by conserving the patient's vitality it decreases the liability of infection. It does not cause postpartem hemorrhage, or injure the mother or baby in any way, as far as can be determined, when used as herein outlined. It is adapted to extensive use under widely varying conditions. Nitrous oxid analgesia is essentially a matter of team work. It requires patience, persistence and co-operation. It affords relief in practically all cases; striking relief in the great majority, and complete relief in many.

I believe I was the first member of this Association to advocate brief, periodical administrations of nitrous oxid for each individual contraction. And after several years' additional experience I am more firmly convinced than ever that this is not only the preferred method of administering nitrous oxid in labor, but that it is also the preferred method of procuring painless parturition.

THE UNDEVELOPED UTERUS.*

By CHARLES LYBRAND BONIFIELD, M.D.,
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THE development of the uterus may be arrested during foetal life, during infancy or at the time of puberty. Arrest at the first mentioned time results in a rudimentary, at the second an infantile, and at the third a pubescent or undeveloped uterus.

The rudimentary uterus is rare. It frequently is accompanied by absence of the vagina. It cannot be made to develop. It in and of itself requires no treatment and will not be further discussed in this paper.

The infantile uterus is more common than the rudimentary but it also is rare. The body and the cervix are about the same size, but both are much smaller than they should be. As a rule such a uterus will not menstruate. If it does the flow will be scant and at long and irregular intervals.

The pubescent uterus is comparatively common and it is to this type that I especially wish to call your attention. The size of the uterus varies from that which is almost infantile in its dimensions to that which is almost normal. The vast majority of such uteri are sharply anteflexed but an occasional one is equally sharply retro-flexed. There is frequently a coincident lack of development of the ovaries which are prone to undergo cystic degeneration while the woman is still young. Menstruation is late in being established and early in ceasing, making its first appearance at about seventeen and its last before forty.

The cause of the arrest of development of the uterus at any time is obscure, but a more rational opinion can be formed as to reason for its arrest at puberty than at an earlier period. Women suffering from undeveloped uterus are from 19 to 24 years of age when they present themselves at the gynecologist's office for treatment. They may be divided into three types: First, the very small, frail woman who has not missed being a dwarf by a very large margin. Second, the woman who is of normal size, possibly taller, but is thin, her limbs and body never having assumed the rounded contour which normally appears at puberty and is one of the chief charms of her sex. Third, the large, robust woman of somewhat masculine build.

Heredity can not play an important rôle in the cause, as the most marked cases are sterile and can not bring forth their kind. It is possible that the union of parents ill-mated may have some effect. It may be Nature's not altogether successful attempt to sterilize that which she does not wish to perpetuate. She does sterilize some hybrids, such as the mule. But against this theory is the fact that such women may have sisters with normal uteri.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 23, 1918.

In obtaining the history of these women we find certain conditions have existed at the time of puberty in a sufficient number of them to lead us to suspect they have a causal relation to the arrested development. A severe attack of the acute infections, such as typhoid fever, diphtheria, scarlatina occurring between 11 and 15 is apparently not infrequently the cause. The same may be said of syphilis, hereditary or acquired; tuberculosis, malaria and chorea. Such a history is much more frequently found in the second type of women than in the other two.

Dr. Robert T. Morris says (*American Journal Obstetrics*, November, 1917): "When nature establishes cultural limitations in the development of a race, she strikes at the female sex first, among plants and animals, and we find more forms of arrested development among women than we do among men. Very few women are 100 per cent feminine. Some of the most brilliant and valuable members of society among women are those who are masculine. They are not the ones to breed; they ought not to breed; they have no business to breed, and we have no business to help them do so." The third type belongs to this class, and I am inclined to accept this explanation of the arrested uterine development. In the first type, faulty functioning of the ductless glands is the evident cause. And it is probable that this is a factor of more or less importance in all three types.

It has long been known that the thyroid undergoes a physiological enlargement at this time. Not infrequently this enlargement goes beyond normal, producing a more or less marked goiter. This enlargement of the gland at this time would seem to indicate an increased demand for its secretions. The fact that we sometimes observe an undeveloped uterus in girls with a slight goiter does not militate against this theory, because the enlargement does not necessarily produce a super-abundance or even an abundance of secretion. These patients will at times tolerate the administration of thyroid extract exceptionally well. In the very small women it appears to be the secretion of the pituitary that is insufficient.

The symptom that brings these patients to our notice is dysmenorrhoea. On inquiring you will most frequently receive the following history: Menstruation began at the age of 16 or 17. At first it was regular but rather scanty. The first year or two it was not especially painful, but after that time the pain made its appearance and became increasingly severe. The explanation of this is, that at the beginning of menstruation the endometrium was healthy, if not well developed, but as time went on the lack of drainage, produced by the sharp anteflexion and small calibre of the cervical canal has caused endometritis.

If the patient is 20 or past, physical examination will often reveal the body of the uterus as being rather larger than normal instead of smaller. This enlargement is, however, more apparent than real. The weak uterus, like a weak heart, dilates. This causes the body to assume a more rounded form, being less flattened antero-posteriorly than the normal uterus. The cavity of the uterus becomes enlarged and the supra-vaginal portion of the cervix elongated, while the intra-vaginal portion retains the size and appearance of the uterus of a girl of 14. The endometritis by this time has assumed the hypertrophic form and menstruation consequently becomes more profuse and even excessive in amount.

The type I have described, is in my experience, the most numerous and the one that is least understood by the majority of clinicians. It is the type in which the uterus most nearly approaches the normal development. There is, however, another type in which the uterus does not in the late "teens" make an effort to assume the normal size and in which menstruation remains scanty, oftentimes appearing at very irregular intervals of from two to six months, or possibly only appearing when induced by medication. The uterus is smaller, more nearly infantile in size. The ovaries and uterus do not always correspond in their development. I have seen perfectly normal ovaries with a rudimentary uterus. In this latter type evidently the ovaries fail to furnish the normal stimulus for menstruation.

Prophylaxis is always the best treatment, and the proper time to treat lack of development of the uterus is in the early rather than the late "teens." If the family physician can be convinced that for a girl not to begin menstruating at the proper time, is conclusive evidence that her pelvic organs are not developing as they should develop and that she requires treatment for them, many of these cases would be spared much suffering and some of them the disappointment which follows their inability to bear children. It ordinarily is not necessary to subject her to a pelvic examination.

I frankly admit I have had little experience in treating these girls at the time of puberty, because having no family practice I do not have an opportunity of seeing them, but I am thoroughly convinced that proper treatment at this time would be even more efficacious than it is in later years.

1. The treatment indicated at puberty is to put the girl in the best possible condition of health, by medical and hygienic treatment.

2. It is to be remembered that intestinal disorders are a frequent cause of anæmia in young girls. Intestinal stasis should be treated by diet, exercise and occasionally a dose of castor oil. Focal infections should be looked for in the ton-

sils, teeth and appendix. The urine should be examined and if too strongly acid, the amount of meat eaten should be restricted, oranges and fruit used freely and if necessary an alkaline water given.

3. In addition to this the extract of the thyroid or pituitary gland and ovarian extract should be judiciously administered.

I read a paper on this same subject at the Cincinnati Obstetrical Society which was published in the *American Journal Obstetrics* for May, 1902. At that time the only treatment that offered these patients any relief, when they came to us at the usual time, was surgical in character. Since that time the better understanding of the function of the thyroid gland, and the more reliable preparations made from the ovary, have come to our assistance and given us another method of treatment that is equally valuable. In the cases where the uterine body is dilated and the hypertrophic endometritis exists, I still regard it as advisable to treat them by a thorough dilatation and a gentle curettage followed by a tight packing of the uterine cavity with gauze, which should remain in the uterus for about five days. If the uterus, particularly the cervix, be packed sufficiently tight, it will usually cause painful uterine contractions after the first 24 hours. Occasionally these contractions are sufficiently strong to expel the gauze into the vagina. When this does not occur it is well to leave the gauze remain in the uterus for 4 or 5 days. If it causes too much discomfort codine may be given to relieve it. These contractions of the uterus are the best possible exercise for that organ. Cases may afterward be treated by the administration of thyroid extract and ovarian extract.

In the cases that menstruate infrequently I have obtained good results by giving thyroid extract for two or three weeks, then stopping it and giving ovarian extract for a week. In the more severe cases, I have the patient report at my office on the day before menstruation is expected and give her a hypodermic of corpora lutea. I find that two ampules is the proper dose. The patient is instructed to partake freely of hot drinks and a hot sitz bath before retiring, and if menstruation does not appear the routine is repeated the second and, if necessary, a third day. Then if menstruation does not appear the patient is put back on thyroid until the following period is expected when she reports again for treatment. Frequently after these patients are made to menstruate a few times, the hypodermic medication can be dispensed with, but the thyroid and ovarian extracts must be kept up until the habit is well established. I usually start these patients on a dose of 1 gr. of the thyroid extract, three times a day, to test their tolerance, and for many of them this is ample, but some will require more. If these patients are excessively fat, I reduce the weight by diet and exercise. Dilatation, curettage and packing will sometimes greatly benefit the cases where the lack of development is most evident. I recall a case that consulted me for dysmenorrhœa when she was about 25 years old. I did this operation for her and she was much relieved for about two years. Her symptoms then recurred and I repeated it. She was again relieved for several years when menstruation first became scant then painful and it was necessary to do it again. This time she was relieved for about five years. Menstruation then became less and less and finally disappeared, though she suffered the pain each month. The flow was re-established by again doing the same operation. A few years later she developed a fibroid and I did a supra-vaginal hysterectomy, thus bringing a most interesting menstrual history to an end. This was 13 years ago, so this patient did not receive the glandular extracts. Could she have had the sexual stimulus of marital life I think the repeated curettings would not have been necessary. Matrimony does sometimes apparently complete the work the physican has begun, though one rather hesitates to advise it, for her marriage would be sterile and therefore an unhappy one. If such a patient does become pregnant, abortion may occur in the early months, but subsequent pregnancies will usually go to term.

In conclusion it may be said that there are a few cases in which all our efforts are in vain, and the only relief for the dysmenorrhœa is removal of the ovaries.

This paper has been written with the belief that if the family physician will more carefully guard the welfare of the girls under his care as they are blossoming into womanhood, the cases that thus compel us to acknowledge our defeat will be still rarer, and the hope that it may persuade some to make the experiment.

Discussion.

Dr. James E. King, Buffalo: Dr. Bonifield has brought before us a very interesting and important subject and one which is frequently misunderstood and often not given the attention it deserves. I should adopt very much the same classification as Dr. Bonifield. He has referred to the type which is due to faulty internal glandular secretion, and I would like for a moment to elaborate a little further on this type.

In considering the physiology and pathology of the endocrine system, we must ever bear in mind the important interrelationship which exists between the glands. It is definitely known that the pituitary is an extremely important sexual gland, having to do largely with the phenomena of puberty. Disturbance in the secretion of this gland occurring at the time of sexual development will manifest itself in abnormal development. The cause of the perverted secretion may be due to condition of the pituitary itself or to the effect of abnormal secretion of other glands. That undeveloped uterus may be the result of such perverted secretion, there is no question. The commonest type is the young girl who is abnormally fat, who is fond of sweets, does poorly in school, and at the age of puberty fails to menstruate normally or may not menstruate at all until late; when once established it is apt to be irregular and scanty. Examination to learn the cause of the abnormal menstruation reveals the undeveloped uterus, which is assigned as the cause. The broader significance of the infantile uterus in such a case is seldom considered and the wider influence of a perverted pituitary secretion is not recognized. This type of case is usually due to hypo-secretion and fortunately we have a clinical test which will bear out the clinical diagnosis. These young women will be found to tolerate large quantities of sugar without any sugar appearing in the urine. This high sugar tolerance is an important test and it is easily carried out. The subsequent progress of these cases is variable. Most of them, however, during adult life bear the evidence of the unbalanced internal glandular system.

Unfortunately the treatment of these cases by glandular extracts is not satisfactory. This is undoubtedly due to the fact that these cases become a polyglandular perversion, and our limited knowledge of the physiology and pathology of this system makes our present attempts at treatment experimental. Certain it is, however, that such cases deserve careful study and by such we shall learn the broader significance in many cases of the undeveloped uterus.

INDUCTION OF LABOR IN SUB-NORMAL PELVIS.*

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At the present time when so much is being written on Cæsarean section it is well for us to consider how a careful study of our patients may obviate the necessity of this procedure and enable them to be delivered spontaneously and with no great risk to either themselves or their children. One of the great indications for Cæsarean section is contraction of the pelvis, and tonight we wish to consider how we can handle cases with sub-normal pelvis without resorting to Cæsarean section.

By sub-normal pelvis I wish to be understood as meaning one which is somewhat smaller than normal, but not necessarily sufficiently small to be classed as a true contracted pelvis. This type of pelvis is very frequently encountered and often gives considerable difficulty at the time of delivery because it is not recognized till labor has well advanced.

In considering labor in this type of pelvis it is well to review for a few moments the four factors which must be taken into account in any labor to determine its outcome. These factors are: First, the size of the pelvis; second, the size of the child; third, the force of the uterine contractions and the contractions of the abdominal wall, and fourth, the degree of molding which the head will undergo. In any labor, as we said, these four factors come into play and disturbance with any one may interfere with the smooth course of labor. Let us see for a moment what knowledge we can gain of these four factors before the onset of labor.

First, in regard to the size of the pelvis. By measurements we can get a very accurate idea of the size of the pelvis as to its inlet and outlet and thus can determine beforehand whether to expect any pelvic dystocia. It is not necessary here to go into the various types of abnormality of the pelvis, but we might consider for a moment the part played by the pelvis in labor. If we have a normal pelvis we know there will be no dystocia through the pelvis unless the child is abnormally large. On the other hand, if we have an extreme degree of contraction we know that the dystocia will be so great that a living child cannot be born through the pelvis. There is a large group between these two extremes in which the other factors will determine whether or not it is possible to have a spontaneous labor.

Second, the size of the child. Our ability to estimate the size of the child before it is born is not so great as our ability to estimate the size of the pelvis. However, we can usually get a very fair idea of the size of the child from a careful examination of the patient at the end of pregnancy, and what is more important we can compare the size of the fetal head with the pelvis and be enabled to predict whether in the individual case the child can safely pass through the pelvis. The various methods of measuring the height of the fundus, for example, to give us an idea of the size of the child, are not very reliable, but from the general impression one gets, and particularly if one acquires a habit of attempting to estimate the size of the child in every labor, one is surprised how accurate these estimates are. The Muller method of impression, where an attempt is made to force the child's head into the superior strait, is very helpful in determining whether or not in any given case the head will pass through the pelvis. Also the degree of over-riding of the symphysis by the head when pressed against the superior strait helps one in determining whether or not there is any marked disproportion between the head and pelvis.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 23, 1918.

Third, the character of the contractions of the uterine and abdominal muscles. We can get no idea until the patient is actually in labor, except in a woman who has previously borne children. In such a woman it is fair to assume that the uterine and abdominal contractions will be more or less of the type they were in previous labors, bearing in mind that with each succeeding labor, particularly if the labors are close together, the strength of the uterine and abdominal muscles is somewhat lessened.

The degree of molding which the head will undergo during labor is something about which we can determine absolutely nothing until the patient is well advanced in labor. However, we should bear in mind that the longer the duration of pregnancy the greater the ossification of the bones of the fetal skull and less molding will take place.

From this discussion we can see that by a careful examination before the onset of labor as term is approaching one can get a very fair idea as to what the chances are in the given case for the child to pass with safety through the pelvis. In the patient with a sub-normal pelvis, if pregnancy is allowed to continue until labor sets in spontaneously, frequently it will be found that the patient has gone anywhere from a few days to two or three weeks over term. The result is that the child is unduly large, the bones of the head are unduly ossified and difficulty is encountered because of these factors; so that when we find a sub-normal pelvis as term is approached we should carefully estimate the expected date of confinement, and if necessary induce labor at that time or a few days before, before the child has reached too great a size to pass with safety through the pelvis. I do not mean to advocate the premature induction of labor, meaning by that the induction of labor at such time that the development of the child is such that its chances for extra-uterine existence are not good. However, in most of these patients a child weighing 6½ to 7 pounds can be born with safety, whereas one weighing 8 to 9 pounds is with difficulty delivered, and my idea is that we should attempt to bring on the labor when the child has reached sufficient development to carry on extra-uterine life with safety and yet is not so large as to cause marked dystocia. In estimating the expected date of confinement our greatest reliance should be placed on the menstrual history. The time of quickening, however, is often helpful in confirming this expected date. I have records of 30 cases of this type that have been treated in the last few years by either inducing labor a few days prematurely or where the patient has spontaneously gone into labor a few days before her expected date of confinement. In these cases all of the mothers have made satisfactory recovery and only one infant has been lost. It is not necessary to go into the detailed account of all of these cases, but it would be of interest to consider one or two.

The first patient, whose pelvic measurements were slightly below normal though not strictly a constricted pelvis. Labor was induced in this patient four days before her expected confinement. The first stage progressed satisfactorily; the head entered the pelvis and the patient was delivered with no more difficulty than a mid-forceps operation. The child had an intercranial hemorrhage and died 36 hours after delivery. In this case there is some question as to whether or not earlier application of forceps would not have been beneficial for the operation was not difficult and it seems that the intercranial hemorrhage was more likely due to the unduly prolonged pressure during the second stage rather than the additional pressure afforded by the forceps. This patient again became pregnant and labor was induced two weeks before term when she was delivered after a short, easy labor, the second stage lasting one hour, of a child weighing 6 pounds 10 ounces. A third pregnancy, which was induced two weeks before, ended in spontaneous labor, child weighing 6 pounds 8 ounces.

Another case is one admitted to the General Hospital January 12, 1917, with the history of having had one previous pregnancy delivered prematurely at 8 months of a child that died two minutes after birth. This girl, 19 years old, was admitted four days before her expected date of confinement. The pelvic measurements: Interspinous, 23; inter-costal, 25; bitrochanteric, 29; external conjugate, 18.5; internal conjugate, 11½ centimeters; outlet, normal. External examination showed the child to be lying in l.o.a. position, head freely movable at the pelvic brim and some over-riding of the symphysis. The child was estimated to weigh about 7 pounds. There was considerable difference of opinion among the staff as to whether or not this child could safely be delivered through the pelvis and some thought Cæsarean section would be the proper procedure. After considerable thought it was decided to induce labor. Some of the factors in reaching this conclusion were: first, the age of the patient, 19. Her husband, who was her second husband, was in jail and this influenced any feeling that we should subject the patient to very great risk to get a living child into the world, for we felt the child's chances would not be very great, considering the social condition of the mother. Labor was induced by the use of a bougie at 9 A. M. of January 16; labor began at 6 P. M.; the membranes ruptured at 3:30 A. M., January 17, and the child was delivered at 4 A. M. The child was a girl and weighed 7 pounds.

These two cases, I think, are sufficient to illustrate the method of handling these patients. The methods employed to induce labor are: first, quinine and castor oil. When this fails we introduce a bougie or a large rectal tube well up into the uterus, and generally labor will begin within a few hours after the bougie is introduced.

The factors which one would take into consideration in attempting to determine how best to handle the individual case with the sub-normal pelvis are several. First, the risk to the mother of the different procedures that may be employed which are: Cæsarean section, pubiotomy, induction of labor. The risk to the mother from Cæsarean section, while not very great is definite, and further, if the patient is once delivered by Cæsarean section it means that that method must be chosen for future deliveries. Pubiotomy should never be a primary operation, but it does sometimes enable us to safely deliver our patient when our judgment has been at fault in inducing labor. Induction of labor is practically free from risk so far as the mother is concerned.

For the child, Cæsarean section offers the best chance for the child. Pubiotomy subjects the child to a certain risk, whereas induction of labor offers the greatest risk to the child if our judgment is not good. Another factor which I feel should help in determining which procedure we should select is the age of the patient. If the patient is young and has many years of child-bearing ahead of her, I feel that the risk should be taken to the child and not to the mother, for we will in most cases be enabled to get the patient safely delivered by induction of labor. In those where the child is lost through our error of judgment, in future pregnancies we can deliver by other means. On the other hand, if the patient is older, she and her husband both very anxious for a child, her chances of future child-bearing not very great, then we frequently resort to Cæsarean section, rather than take the risk to the child of inducing labor.

In conclusion, I hope that I have indicated that by careful examination before term, and in certain cases inducing of labor just before term, we are enabled to safely accomplish delivery for both mother and child without subjecting either to any undue risk, whereas if these patients with sub-normal pelves are allowed to continue in the pregnancy until spontaneous labor begins, we frequently encounter difficulties due to the undue size of the child and have to resort to more serious operative procedures to accomplish a delivery, often with unsatisfactory results to both mother and child.

THE CLINICAL COURSE OF LABOR IN BREECH PRESENTATIONS WITH SPECIAL REFERENCE TO THE PREVENTION OF COMPLICATIONS.*

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DELIVERIES by breech may be classified as easy and difficult. When membranes remain intact until late in labor, when there is ample room for the passage of the foetus, and when the expulsive forces are efficient throughout, it is common experience for delivery to be accomplished with surprising ease. But there are cases that are far from uneventful. Often they present a sequence of complications and the delivery that is accomplished with increasing difficulty suggests a single cause common to each or such a definite inter-relationship that one complication follows another.

The first class of cases exemplifies the harmonious working of physiological forces; the second is explained by abnormalities in and perversions of them.

Contrast the pathological aspects of labor in vertex presentations with those in breech. In the former the common abnormalities arise before or at the time of advance and birth of the child, and operative interference is instituted because of them. For the lack of advance due to incomplete dilatation of the cervix and failure in anterior rotation of the occiput in vertex presentations occasions the advance produced by forceps. In breech presentations accidents and complications increase in frequency and gravity as advance is accomplished. For the not-fully-dilated cervix offers little obstruction to the passage of the breech, and still less to that of the compressible foetal abdomen through it, while that offered to the passage of the after-coming head with extended arms may be complete. Here grave complications are secondary to advance; and, since the latter is quite completely within the power of the operator to control, it may be argued that the former to the same extent are preventable.

There is a mechanism of labor peculiar to breech presentations and, although the various steps will not be enumerated, there are three features that are to be emphasized. They are (1) complete dilatation of the cervix, (2) engagement, descent and birth of the arms flexed, and (3) engagement of the after-coming head flexed, its descent in an oblique diameter, and birth, after traversing the curve of the pelvic canal, by flexion. They are mentioned particularly because, to the extent to which they are not manifest or are nullified by actual interference, it can be shown that accidents and complications increase both in frequency and intensity.

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The familiar complications of delivery by breech may be enumerated as: (1) dry labor, (2) retraction, used synonymously with the term "impaction," (3) extended arms, (4) intrauterine asphyxia from delay in delivery of the after-coming head, and perineal laceration. Extended legs will be discussed under retraction with which it is so commonly associated.

Dry Labor. Premature rupture of membranes is of frequent occurrence; it is important because of its relation to incomplete dilatation of the cervix and to retraction of the lower uterine segment.

The intact bag of waters by its downward and outward pressure aids materially in obliteration of the internal os. Its relation to dilatation of the external is different though no less important. As a centrifugal force applied to the edge of the dilating external os intact membranes is unimportant, for pressure within them sufficient to produce direct dilating effect would result in speedy rupture and loss of the force did the external os present even a moderate degree of dilatation. But the intact bag of waters, ordinarily prevented from rupture by the familiar "ball valve" action of the presenting part, aids directly in dilatation of the external os by offering a uniform ovoid up over which the thinned-out lower uterine segment is readily drawn.

Premature rupture interferes with dilatation of the cervix and by so much prolongs labor; it predisposes to retraction and, as will be shown, by so much obstructs labor.

When membranes rupture prematurely a hydrostatic dilating force is lost and obliteration of the internal os accordingly retarded. In addition there is substituted for the uniform ovoid one presenting hollows and depressions to which the uterine musculature, and particularly that of the lower uterine segment, can apply itself and up over which the latter with its dilating external os is less readily drawn.

Retraction. For purposes of discussion the term retraction is applied to a state wherein the lower uterine segment has applied itself more or less intimately to the irregularities of the foetal outline in relation with it. Premature rupture of membranes has been shown to be a predisposing factor. To the extent to which retraction obtains, thinning out of the lower uterine segment, dilatation of the external os, and so advance of the presenting part are interfered with.

The musculature of the lower segment, while characteristically passive, is not wholly so. On the other hand, the activity it does manifest differs from that characteristic of the upper segment in that it more readily retains its tone—a fact readily appreciated when an attempt is made to push the thickened segment and the not completely dilated external os up and over the presenting part without the relaxing effect produced by deep ether anæsthesia.

An additional force remains to be considered. The functionating "retraction ring" is a phenomenon of normal labor appearing at the height of uterine contractions and disappearing in the intervals between them. When the lower uterine segment musculature retains its tone, the "retraction ring" does the same; and, to the extent to which the active "ring" grasps the portion of the child in relation with it not only further advance of the lower segment up and over the presenting part but also progress of the latter through it are prevented. Labor now is obstructed.

The subject of retraction has been discussed in detail for two reasons: (1) it is the essential mechanical force concerned in the complication commonly known as "impaction"; and (2) retraction not only predisposes to but often is actually responsible for extended arms and intrauterine asphyxia from delay in delivery of the after-coming head.

In neglected transverse presentations true impaction is encountered since progressively increasing diameters meet the non-elastic resistance of the bony pelvic inlet. In breech presentation the presenting part is more or less compressible, its diameters are not great, and impaction from meeting with bony resistance is impossible. Even with the legs extended it would not be encountered until both feet and head arrived at the pelvic inlet, a condition that would obtain late in expulsion. But "impaction," as understood, occurs early in expulsion and often makes advance of the breech impossible. Here a compressible presenting part and one with fairly constant diameters advances gradually into a progressively narrowing elastic funnel that the retracted lower uterine segment represents and a muscular impaction results.

Another feature of "impacted breech" remains to be considered. The association of extended legs with impaction is characteristic. Obviously the position of the legs as described is not primary. The attitude of universal flexion assumed by the child in utero is modified only in response to pathological forces encountered in advance. In complete breech the freely movable feet are retarded as resistance to advance of the presenting part is offered by the retracted lower segment. As advance continues they rise and the legs completely extend, the firmness with which they are held extended depending upon the intensity of retraction.

Since retraction interferes with complete dilatation of the cervix it is a complication of the first stage of labor, the business of which is dilatation but not advance. Recognition of this fact is imperative, for were expulsive efforts, even though spontaneous, permitted in the presence of retraction, the inevitable result would be impaction; were they supplemented by untimely efforts at extraction, increasing difficulties would be encountered as progressively larger and less compressible diameters were drawn into the retracted lower uterine segment.

Extended Arms. Intra-uterine Asphyxia from Delay in Delivery of the After-coming Head. These complications are considered together because they are frequently so met, and because similar physiological forces are at work to prevent them while identical pathological forces produce them.

In utero the child lies with its arms folded across the chest—a position which the well-flexed head and the enveloping uterine wall preserve. Pressure of the contracting upper segment on the cephalic extremity produces and maintains flexion of it as the podalic meets the uniform, elastic resistance of the lower segment. Extension of arms upward and over a well-flexed head is inconceivable, were none but physiological forces at work. When resistance equals or exceeds expulsion labor is obstructed but extension of arms and head is possible only as, in the presence of resistance, advance of the upper portion of the child is secured. The extension is not primary; it occurs during advance and is due to it.

Practice extraction in the presence of the resistance offered by the retracted lower uterine segment and the arms, grasped firmly by the musculature, are pushed upward to arrange themselves along the sides of the head already extended by the upward advancing arms—a position that the increasing pull from below inevitably exaggerates. Longer diameters present and subsequent difficulty in engagement and descent of the head is to be expected.

Perineal Laceration. This accident is of frequent occurrence; often it is extensive. Now regardless of presentation, damage to pelvic floor and to perineum is lessened as the structures are stretched by the gradual advance of the passenger, as the head (since it is large and relatively incompressible) follows the pelvic curve and is delivered by its shortest diameters. These conditions are realized to a surprising degree in breech presentations when the physiological mechanism of labor obtains, the slight disadvantage arising from the fact that with the unmoulded head the sub-occipito-frontal diameter rather than the slightly shorter sub-occipito-bregmatic, is to pass the vulvo-vaginal opening is more than compensated for by the fact that the gradual stretching to which the soft parts have been subjected has well prepared them for such delivery. But the after-coming head advances more rapidly than does the presenting-part in vertex presentations. Still were it to describe the normal pelvic curve and leave the vulvo-vaginal outlet in the position of flexion, it would not only have travelled the line of least resistance but would have escaped by diameters only a trifle larger than those offered by the moulded fore-coming head.

With none other than physiological forces at work, the perineum should escape other than minor injury.

But let there be obstruction to advance either from retraction or from extended arms, and let the pull from below exceed the "push" from above. Sooner or later obstruction is overcome. The large cephalic pole advances in the direction of the pull which commonly is downward and often with such rapidity that the curve of the pelvic canal is not followed. The perineal body offers slight resistance to the precipitate advance and gives way. Many second and practically all third degree lacerations are to be explained on no other basis. They are the results of a disregard for or an inabilty to simulate the normal mechanism of delivery by breech.

The frequent accidents and complications may be summarized as follows:

(1) Dry labor: an unfortunate but, in most instances, an unavoidable accident.

(2) Retraction: a grave complication but preventable to the extent that premature rupture of membranes predisposes to it and ample opportunity for the prophylactic and active treatment of it is offered.

(3-4) Extended arms: Extended head: complications that are not primary, and that are preventable to the degree to which the operator controls expulsion and advance.

(5) Perineal laceration: avoidable as in vertex presentations and due almost wholly to the manner of advance and delivery of the after-coming head.

In discussing the actual management of labor in breech presentations, only two classes of cases will be considered: (1) those from choice that are to be treated expectantly, and (2) those from necessity that have to be soon conducted. It is presumed that expectancy has been decided upon in the absence of absolute or even of relative pelvic deformity, the appropriate treatment of which it is not purposed to discuss.

Premature rupture of membranes may not interfere with dilatation of the cervix. This is common experience when the accident occurs after obliteration of the internal os, which not infrequently is quite complete at the onset of labor. But when encountered and the internal os has undergone little obliteration or when the lower uterine segment is thick, the introduction of a hydrostatic dilator supplies the mechanical force in obliteration that the uterus has been denied, shortens labor by substituting constant and uniform pressure for that less constant and less uniform offered by the breech and, if installed early, prevents complete draining away of the liquor amnii and the embarrassment from subsequent uterine retraction that such a loss occasions. The advantages gained from its use far outweigh the possible danger of infection and the difficulty of its introduction. Fortunately larger dilators than would be safe in vertex presentations may be used in presentations by the breech, for, if the dangers of prolapse of cord are excluded, there is little to be feared from the upward displacement of the presenting part. When one of the larger dilators—a No. 3 Vorrhees, for instance—has been expelled, not only is the external os well dilated but the lower segment to the same degree is thinned out and retraction, were it to supervene, would be correspondingly less formidable.

On occasion and especially early in labor, contractions recur at intervals of two or three minutes with an individual duration of from forty to fifty seconds. They commonly are "painful"; not infrequently they follow premature rupture of membranes, and are associated with little cervical dilatation. Conditions as described call for correction lest retraction, the more immediate result, or inertia, the more remote consequence of uterine overaction follow.

The milder cases yield to inhalations of ether given continuously, to the obstetric degree and for a relatively short time, if not to single conservative doses of morphine combined with atropine. But there are limits to the extent narcotics and anaesthetics may be employed; and, when the simpler methods are ineffectual, or cannot be persisted in, or when symptoms are more marked, other means of interference must be sought.

If the frequency and intensity of contractions cannot be decreased, the dilatation or dilatability of the cervix can be increased; and, to the extent to which either is brought about, even though uterine overaction persist, retraction and inertia are rendered less probable. What should be done depends upon the obliteration of the internal os: when wholly effaced, a careful digital dilatation under ether may be carried to a point of which the manifest frequency and intensity of the contractions are characteristic: when unobliterated, the introduction of a hydrostatic dilator is promptly followed by a resumption of more normal uterine action as well as the other benefits of a satisfactory dilating force.

The next group of cases to be considered is that in which the presenting part not only is well engaged but possibly lies deep in the pelvis; the legs commonly are extended; dilatation of the cervix has progressed to such a point that possibly its edge is felt with difficulty, and the entire uterine musculature frequently presents "tone" rather than complete relaxation between contractions.

The condition is familiarly known as "impaction." The cause is retraction of the musculature of the lower uterine segment. The result is lack of advance in labor even though the muscle, except in the protracted cases, is far from inert.

There is no more important condition encountered in delivery by the breech than that just described, for the reason that upon the methods employed in treating the "lack of advance" much of the success or failure in the delivery that ultimately is to follow is due. Retraction has been discussed and has been designated a complication of the first stage of labor. The delay due to it, therefore, must receive treatment appropriate to the stage of labor in which it occurs; and advance is not desirable first stage treatment.

Under these circumstances, treatment with pituitary extract is less effectual though no more strongly contra-indicated than traction on the so-called "impacted breech" by the finger in the groin, or by the (fortunately obsolete) blunt hook, or through a leg brought down in the belief that by such a procedure impaction can be broken up and delivery accomplished. As the result of one or more of these procedures the breech may advance, but invariably with an accentuation of retraction and a consequent increase in the muscular resistance the after-coming chest, arms and head are to meet.

But first stage procedures are easily carried out. They are directed toward complete dilatation of the external os and drawing up of the lower segment over the presenting part and, although not always followed by a spontaneous second stage, they make possible a much simpler and more uneventful extraction.

The specific for uterine overaction is ether by inhalation. A moderately profound anaesthesia maintained for twenty minutes almost invariably is followed by contractions of which intermittency (that is complete relaxation) is characteristic. Now retraction, even though little tone is constantly maintained in the upper segment and the lower is essentially affected, will persist as long as more or less complete relaxation between contractions is absent. Produce relaxation in the manner described and the grasp of the retracted lower segment is loosened. A spontaneous and rapid second stage not infrequently follows this simple procedure.

The case may not advance. The extended legs acting as body splints may interfere with lateral flexion of the trunk necessary for descent. The presenting part is neither large nor firm enough to have produced complete dilatation of the external os, through which the buttocks are found protruding. An extra dilating force is desirable and the feet can be so employed. Bring down a leg: this is not difficult under ether. (Indeed, in the presence of marked retraction, it may be possible only under anaesthesia.) Preferably bring down both until the feet lie in the cervix. The presenting part is enlarged and the feet supply an additional (and fortunately a centrifugal) dilating force. Uneventful expulsion not infrequently follows such logical management of labor obstructed late in its first stage. The bringing down of one or of both feet and legs through the cervix increases the size of the presenting part but little, and is indicated only in those rare instances in which speedy extraction is imperative.

Management of conditions arising during actual expulsion and delivery—that is, during the second stage—have yet to be considered. Bearing in mind the earlier discussion of the physiological forces that keep the arms and head flexed in advance, it is apparent that the presence of uterine contractions of maximum efficiency is essential to an uneventful second stage. Their efficiency must not be impaired either by the use of anaesthetics even to the slight degree necessary for the relief of pain or by the unfortunate occurrence of secondary uterine inertia that too frequently follows a prolonged and untreated first stage. Inertia should be prevented. When present to a marked degree there is no more excuse for extraction than for the application of forceps in vertex presentations under similar conditions.

When contractions recur at regular intervals, though with impaired efficiency, they may be supplemented by conservative stimulation with pituitary extract (minims 3 or 4, for instance) or to great advantage by firm and intermittent pressure at the fundus. But they are to be supplemented by traction on the breech only in rare instances and then never to a degree greater than that represented by the "push" from above. Extension of arms and of after-coming head result from disregard of this simple rule.

Granted the case is one in which haste in delivery is not imperative, the conduct of the second stage may be summarized as follows: In response to propulsive uterine contractions, the frequency of which may be increased by persistent gentle massage of the fundus and the intensity of which should be augmented by firm downward fundal pressure exerted by the hands of an assistant, the breech gradually distends the perineum and is born. The feet may be lifted out of the vulvo-vaginal opening which on occasion retards their advance. Anterior rotation commonly is incomplete and the buttocks as frequently are born in, or approximately in, an oblique diameter. Subsequent expulsive efforts are to be awaited and the temptation to exert traction resisted. Since the arms are to descend in an oblique diameter, no attempt should be made to rotate the back to the front. The danger from pressure on the cord at this time is slight; however, it should be anticipated and the foetal heart frequently auscultated. With the next contraction the navel commonly is born. At this point it is imperative, with each contraction, that fundal pressure be increased for the cephalic extremity is leaving the active upper and entering the less active lower segment. As advance is accomplished the child's body is raised and two fingers, inserted beneath it, are directed upward to meet and pull down first the elbow of the flexed posterior and then of the anterior arm. It is at this time that firm traction too frequently is employed. Following the expulsive efforts resulting in birth of the shoulders, the uterus temporarily is inactive and tractile force alone necessary to deliver the after-coming head would have to be correspondingly increased. Such force, applied about the child's neck and over its shoulders, entails the danger of injury to nerve trunks and subsequent paralyses as well as that of extensive perineal laceration due to rapid advance and delivery of the head. Rather, the child's body is raised obliquely over the maternal abdomen, and the final expulsive effort of the uterus awaited. The body is raised obliquely that the anatomical relation between it and the after-coming head, which is to advance in an oblique or possibly in the transverse diameter of the inlet, may be preserved: it is placed over the maternal abdomen that it may be momentarily extended upon the head which is to undergo progressive flexion (as the occiput is retarded by the synphysis), to follow the curve of the pelvic cavity, and to leave the vulvo-vaginal outlet directed forward and upward. Firm, intermittent, supra-pubic pressure is the most available and satisfactory force to supplement the feeble uterine expulsive efforts at this point, and traction on the shoulders, though efficient, is unsatisfactory because of the difficulty in securing the rapidly changing direction of pull that is imperative if the head actually is to follow the curve of the pelvic canal. When spontaneous or artificial expulsive efforts are insufficient to produce advance, the head may be brought into the mid-pelvis by means of forceps. Further advance and at the same time accommodation to the pelvic curve may be secured by firm pressure from above and moderate traction exerted by the finger in the child's mouth. In this manner the face can be brought to the vulvo-vaginal outlet or to such a point that depression of the perineum by means of a posterior vaginal retractor will permit of the entrance of air to the mouth. At this time the largest diameters have yet to be delivered but, since the dangers of intra-uterine asphyxia now are nil, reasonable time may be spent in securing the gradual dilatation of the outlet necessary to permit of the passage of them without perineal injury.

The foregoing is neither a consideration of all the complications associated with delivery by breech nor of the various methods to be employed in the operative treatment of them. It is conceded that many cases present serious difficulties even when physiological forces have been perfectly utilized and when no disproportion exists. But it is insisted that the majority of the difficult deliveries may be placed in one of two classes: (1) those due to relative or absolute disproportion, in which expectancy is contraindicated, and (2) those in which physiological forces either were nullified or were replaced by those wholly unphysiological.

Your attention is directed to the clinical aspects of labor in presentations by the breech in order that none but suitable cases shall be given the test of labor and that consideration of the physiological mechanism of labor peculiar to the presentation shall be the basis of conduct of those cases in which expectancy has been decided upon.

INJURIES AT BIRTH, THEIR EFFECT UPON THE CHILD AND THEIR PREVENTION.*

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THE first four weeks of life show the highest mortality. About 10 per cent of the children born die of immaturity, asphyxia, atelectasis, malformations, injuries and infection.

Brain. Injury to the brain is most frequently the result of the faulty use of forceps or of the violent extraction of the after-coming head. It may be a meningeal hemorrhage, varying in extent from the rupture of a small vessel and a slight extravasation of blood to the laceration of the longitudinal sinus and a fatal intracranial hemorrhage. If less in degree the child may live to adult age, but is apt to show impaired physical or mental development. The brain-substance may be crushed. Injuries may be inflicted upon the brain not so grave, but affecting intellectual or physical centers, and the subsequent mental or physical development of the individual. There may be simply compression of the brain, causing perhaps asphyxia.

Persistent priapism may be seen occasionally, as a result of injury to the brain or cord.

Peripheral Nerves. The facial and brachial plexuses are the peripheral nerves most frequently damaged. The majority of cases of facial hemiplegia are due to the faulty use of forceps. Recovery may be expected, usually in the course of a week. Should this fail to occur, the faradic current may be used with advantage. Facial palsies at birth are usually unilateral and transitory; they may, however, be bilateral and permanent. The brachial palsies result from unskilled attempts at extracting the shoulders and arms or undue traction on the head rupturing one of the roots. They are permanent unless relieved by nerve splicing or junction.

Skull. Spoon-shaped Depressions of Parietal or Frontal Bones may be caused by a prominent promontory or by forceps. It has been suggested to elevate the depression by pneumatic traction or by trephining. My colleague, Dr. C. H. Frazer, has successfully operated on a case for me.

Fractures, if compound, require an aseptic dressing. Recovery, even from so grave an injury, sometimes occurs.

Distortion of the head is very common, almost constant. Its variations in form are the result of the different presentations and positions. The deformity, even though very marked, disappears within the first three days.

Scalp. Caput Succedaneum. A serous infiltration of that portion of the presenting part corresponding to the external os. It disappears in two or three days, and requires no treatment.

Cephalhematoma is a more important condition, and is to be distinguished from a caput succedaneum. It occurs about once in two hundred cases. Usually two or three days after birth a swelling develops, rapidly increasing in size, possessing the physical signs of a cystic tumor, distinctly confined by the boundaries of one of the cranial bones. It may be bilateral. It may occupy the parietal and occipital bones, and it may possibly develop before birth. It is due to a subpericranial hemorrhage, which lifts the pericranium from the bone, irritates it, and stimulates it to bone-production, thus giving rise to a bony sensation at the lifted edges of the pericranium, and later to a peculiar crackling or crapitus over the surface of the tumor, due to the movement of the thin bone-plates on one another. Non-interference is the treatment, except when the hemorrhage is excessive or suppuration occurs. The former may be controlled by pressure and cold; the latter requires incision and drainage, with strict asepsis. In spite of the greatest care, septic meningitis may develop.

Contused and lacerated wounds, usually the result of a forceps operation, are to be treated on general surgical principles.

Sloughs. The vitality of the scalp may be destroyed by forceps or by prolonged pressure from the pelvic bones and sloughs may appear in the first few days after birth. They require the ordinary surgical treatment for the same condition anywhere on the body.

Face. A caput succedaneum may occupy the face if it presented in labor. The eyes and the mouth may be injured by careless examinations or by violent extraction of the after-coming head. The former may be injured by the forceps. The globes may be luxated to complete exophthalmos; the recti muscles may be permanently paralyzed; there may be subconjunctival or palperbral ecchymoses, edema of the lids, and temporary ptosis; fracture in the roof of the orbit; exudation of blood into the anterior chamber. The cheeks, temples and forehead may be bruised, crushed or cut by forceps. Hematomata may develop in the cheeks within 24 hours of birth. The blood-tumors should be let alone, as in the case of a cephalhematoma.

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Neck. There may be injury and thrombosis of the neck-muscles, with reactive inflammation, most frequently of the sternocleidomastoid, with the development of torticollis. This sort of wry-neck usually recovers without treatment.

Fracture, Dislocation or Decapitation. The author has been told the details by eye-witnesses of three cases in which the head was pulled off after version. In each instance Cæsarean section was done to extract the head. The women all died. Craniotomy should obviously have been the operation for the extraction of the head.

There is occasionally injury to the cervical spine and to the larynx and trachea, in consequence of the excessive twisting of the neck that occurs when the occiput turns forward from a posterior position and the shoulders do not follow the movement of the head.

Limbs. Fractures, which are usually a separation of diaphysis and epiphysis, require, in the case of the lower extremities, surgical fixation, extension, and a plaster bandage. In the case of the arms, fixation in the Velpeau position by a jacket with only one armhold, for the sound arm. Union is prompt. Fractures are usually the result of faulty management on the physician's part, but they may be spontaneous. Avulsion of the limbs sometimes occurs in efforts to extract a premature or macerated fetus.

In a case admitted to the University Maternity, both arms of a well-developed infant were pulled off in an attempt at version; the uterus was ruptured and two feet of ileum were pulled loose from the mesentery.

Trunk. Perforations of the groin and perineum may be due to the use of a blunt hook or a forceps applied to the breech. There may be rupture of some important viscus, like the spleen, liver, or lungs, with fatal hemorrhage into the peritoneal or pleural cavities, expecially in syphilitic children; or visceral hemorrhage may occur as in the kidney without actual rupture, but to a sufficient degree to abrogate the functions of the organ. Fracture of the clavicle in extracting the after-coming head may result in the puncture of the lung by the broken end of the bone and in fatal emphysema. The kidney, spleen, and liver have been ruptured in attempts to extract the breech. Subcapsular hemorrhages in these organs are observed quite frequently. In the pleura there are often ecchymotic spots in asphyxiated children with minute but multiple extravasations in lungs and brain. The pleura may be lacerated, with a hematothorax as the result. The body may remain distorted for some time as the result of a face presentation and there may be ecchymoses upon the body if there is a presentation of the trunk.

Bowel. The large bowel may rupture from pre-existing ulceration or necrosis, usually at the sigmoid or other flexures.

It is obvious that the great majority of these graver injuries are due to faulty obstetrics. Specialists and the better trained element in the profession have definitely given up forcible deliveries of all kinds. Hard forceps operations with hours of strenuous pulling are no longer performed. When the head cannot engage first, the former plan of doing version to try to pull it in the pelvis by main strength is not recognized as a legitimate procedure. Mistakes in diagnosis resulting in applying forceps to the breech, or to one buttock or forcing a blade between the scalp and the skull are evidences of incompetency. Too long delay in applying forceps or in terminating a tardy labor is also the result of bad judgment, neglect or ignorance.

The prevention of these injuries must be the result of a better education in obstetrics than former generations of medical students have had in America.

The indications for Cæsarean section, the technique of abdominal surgery, the limitations of and the indications for the minor obstetrical operations, the proper time and the indications for premature labor; pelvimetry and antipartum foetometry must all be taught not only theoretically but by sufficient practical drill. The rosters of our medical schools must be constructed on modern pedagogical principles and not in accord with the absurd allotment of time prescribed by the committee on medical education of the A. M. A., which calls for much the smallest amount of practical training demanded by any civilized country. When these reforms are accomplished it will be found that injuries to the child at birth have become rare; in fact, should almost disappear.

As to the effect of these birth injuries upon the child it may be summed up in a single sentence, death or a disability often making death preferable.

If Snow's statistics, based on almost a million and a half births, are correct, 250,000 infants are lost annually in the United States in the first four weeks of life. If there are 2,500,000 births annually in our hundred million population there have been at least a half million abortions. In other words, there is a loss to our population, largely preventable, of three-quarters of a million every year. This is a fearful wastage of human life that could be enormously reduced by prenatal care and the proper management of labor. There is scarcely another medical question comparable with this in its economic and humanitarian importance, especially at this time of reckless slaughter of the youth of so many lands. It behooves our medical teachers and our lawmakers to give it adequate attention.

PUBLIC HEALTH IN RUSSIA AND THE UNITED STATES.*

By C.-E. A. WINSLOW, D.P.H.,
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It was my privilege to spend last summer in Russia as a member of the Mission sent out by the American Red Cross to offer the assistance of America in the relief of a nation worn by three years of war and shaken by the throes of revolution. Colonel Frank Billings of Chicago and Colonel W. B. Thompson of New York headed the Mission; Major W. S. Thayer of Johns Hopkins, Major G. C. Whipple of Harvard, and Major H. C. Sherman of Columbia were among its technical members; and the work, still going on in Moscow, is at present in charge of Colonel Raymond Robins of Chicago. It was possible to render material aid in the form of medical and surgical supplies, as long as the Russian army was able to keep the field, and all through the past winter America did her share in the relief of the suffering civilian population, four and a half million pounds of condensed milk having been shipped at last reports for the feeding of the children of Petrograd.

I am not here this afternoon to discuss the political aspects of the Russian situation. I do want to say, however, that, in my judgment, America owes to Russia the maximum of her faith and her patience and her sympathy and the maximum possible of material aid consistent with the other responsibilities which the war has laid upon us. Russia deserves our help because of the burden she has borne in the past for the Allied cause—two million dead, two million and a half prisoners in the hands of the Central Powers, four million sick and wounded soldiers during her three years' participation in the conflict. She deserves it because of the promise for the future which is offered to the world by her new democracy—a democracy struggling against tremendous difficulties but animated by ideals as splendid as any that the world has ever seen. Those ideals must triumph if the ultimate victory over Prussian autocracy is to be secured; and it is perhaps only through the aid of America that they can triumph.

My own work in Russia was concerned with the organization of plans for the care of the destitute children of Petrograd and with a general survey of the problems of public health administration in the critical period of transition between the old and the new regime. It is in regard to this latter problem, and the bearing of some of the things they are attempting in Russia upon our own public health campaign in America that I have been invited to say a few words this afternoon.

The points in which Russian public health work resembles our own may be dismissed with brief consideration. In the field of sanitary engineering the development of public water supplies and sewerage systems has been limited. In 1912 out of 1063 towns and urban settlements with a population of over 10,000 only 219 had organized water supplies of any kind, only 167 supplied water to private houses and only 59 were provided with filters. There are today not more than a dozen cities with modern sewerage systems. Petrograd has an extensive system of storm sewers but fecal wastes are discharged into cesspools, the contents being collected at intervals in tank carts and carried to a central disposal plant; while even in Moscow only the inner zone of the city has sanitary sewers. Such engineering work as has been installed is, however, of high technical excellence. One of the water purification plants in Petrograd, for example, is an admirable example of mechanical filtration combined with ozonization; and the experimental station for the study of activated sludge treatment and other modern processes of sewage treatment at the sewage farms of Moscow is one of the most interesting installations I have ever visited.

In the field of statistics Russia is handicapped by the fact that there has been no general census since 1897, and by the lack of any system of medical registration of births and deaths for the country as a whole. In the cities, however, registration is fairly good and the analysis of such data as are available is excellently done. The Russian has rather a gift for statistics and the statistical bureaus are well organized and directed by highly competent experts. The Statistical Bureau of Moscow has a library of 50,000 volumes and both here and at Petrograd a long series of admirably detailed reports have been published.

The bacteriological and epidemiological work of Russian health departments is also of a high grade. In 1914 there were 54 hygienic laboratories registered with the Central Bureau of Public Health and 32 Pasteur stations. Many of these laboratories are in charge of highly qualified men who in the past have had leisure and inclination for productive research as well as for routine duties.

The control of communicable diseases is in general reasonably effective in the large cities; and the leaders in this field are in sympathy with the modern American view as to the supreme importance of bedside care of the individual and the detection of carriers, as compared with the terminal disinfection of places and fomites. In current practice, however, terminal disinfection still occupies a large place in municipal sanitation, a condition to some extent justified by the danger of insect-borne diseases, such as typhus and relapsing fever. The success with which these latter diseases are controlled in the larger cities is a credit to Russian sanitary science. In certain parts of the country, however, these diseases, and particularly malaria, constitute grave public health problems which must be dealt with in the future.

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Medical inspection of schools is general and well developed, the school doctors in many districts undertaking the care of the sick children in their homes as well as diagnosis in the school. School nurses are not, however, utilized as with us, and public health nursing in general is a problem for the future.

This lack of the follow-up work in the home which we have found so essential in connection with medical school inspection in America brings us to the most serious deficiency of public health organization in Russia, the lack of effective machinery for public health education.

The largest and most vital health problems of the present day, such as the control of tuberculosis and the reduction of infant mortality, are problems which can only be solved by reaching the man and woman in the factory or on the farm and in the home, and changing the habitual conduct of the individual life. Along this line very little has yet been attempted in Russia. The campaign against tuberculosis has scarcely begun. This disease is treated as a rule in the general hospitals, Petrograd having had but one 60-bed sanatorium and Moscow two, each with a capacity of about 40 beds.

Petrograd has only one poorly organized tuberculosis clinic. It is probable that the Russian has a high natural resistance to tuberculosis; and this fact, combined with the rigorous examination of recruits for the army, prevented any such increase as has taken place in France, in spite of the peculiarly insanitary conditions under which so many Russian troops were housed in peasant dwellings behind the front. There is little doubt, however, that tuberculosis is more prevalent, in both the civil and military population, than is commonly recognized, or than is indicated on the face of the statistics. "Chronic pneumonia" is a commonly reported cause of death, even in the army. A vigorous and comprehensive anti-tuberculosis campaign will be certainly one of Russia's first problems after the war.

The largest single objective of the public health movement in Russia, even more than elsewhere, must be the reduction of infant mortality. There are approximately a million and a half infant deaths in Russia every year, of which two-thirds should be preventable; for the present rate is in the neighborhood of 250 deaths under one year per 1,000 births. This enormous infant mortality is everywhere due to Dr. Emmet Holt's twin factors, "poverty and ignorance." In particular, it is ignorance in regard to the principles of infant feeding which contributes most conspicuously to the unfortunate results. The Russian mother is apt to continue to give breast milk to her infant for a considerable period; but unfortunately she gives the child other and less innocuous foods from a very early age. Thus of a group of mothers in Saratov Province only 10 per cent were found by Dr. Minkh to be bringing up their babies on breast milk only, while in another district only 1.4 per cent nursed their babies without the addition of other food up to the seventh or eighth month. Of 2,000 women canvassed by one investigator in the Province of Orel, 49 per cent had begun artificial feeding by the end of the first month.

The remedy for all this is of course clear and obvious, the establishment of infant welfare stations for the instruction of mothers in the duties of maternity, and such an improvement in their economic condition as may enable them properly to fulfill those duties.

A good beginning has been made in preventive work along such lines. Moscow, for example, maintains three infant welfare stations, at which some 3,000 infants are received during the year and about 100,000 quarts of milk distributed. The principal station, in connection with the Morosov Hospital, is the most perfectly equipped plant for the purpose which I have ever seen. The rooms are light, airy, and tiled, every possible equipment for the medical examination of the infants and for the preparation of milk is provided, and the waiting room is furnished with an admirable collection of models and pictures illustrating good and bad methods of infant care, the models of dangerous foods and the pictures of objectionable methods of clothing and the like, being all labeled in red so that the most ignorant mother cannot fail to grasp their significance. In Petrograd there is the nucleus of an admirable organization of milk stations and baby clinics (some under public and some under private auspices) which cared last summer for between 5,000 and 6,000 children. Everywhere, however, the amount of work done is woefully inadequate, and in particular the educational follow-up work of the nurse is almost wholly lacking. An organization known as The Patronage for the Protection of Motherhood and Childhood has made a beginning along this line, having about 15 nurses doing home visiting in Petrograd, but the municipalities have not as yet any facilities for such educational work. All the infant welfare work in Russia, and particularly that in Petrograd, is gravely hampered at the present time by the shortage of milk which has resulted from the war and from the revolution.

Public health work in England and America has passed through a series of rather definite phases; but in judging of the relative progress made here and in other countries we must remember that the order of development may not everywhere be the same. Here, we have passed from an early stage in which the sanitation of the external environment was our chief preoccupation to a second in which the control of community infections by epidemiological, bacteriological and serological methods was predominant. Today we are entering a third stage of public health work in which attention is more and more focused upon the education of the individual in the laws of personal hygiene; and we glimpse already the lines of still further developments in the control of diseases in their incipient stages by the application of medical knowledge in a preventive, and therefore effective, form by a far more extensive organization of clinics and hospitals maintained at public expense.

Russia has developed the stage of environmental sanitation only in a limited way and the stage of public health education scarcely at all. She is perhaps abreast of us in the bacteriological and medical control of community infection. In the stage which has come last in America, the provision of free medical care, she is ahead of us; and it is in this field of Russian health organization that we have most to learn from her.

It was natural that provision for the care of the sick at public expense should develop more rapidly in Russia than in the United States, because in Russia there was no other recourse, while with us the private practitioner met the more obvious and pressing needs. In terms of actual accomplishment even the organization of the system of zemstvo medicine has fallen very far short of Russia's needs. In 1914 there was one physician to 1,700 inhabitants in the cities and one to 23,000 in the rural districts. Yet Russia has, in principle at least, recognized that the care of the sick is a state function and has established machinery for meeting it which has accomplished wonders in view of the difficulties involved.

Fifty years ago the rural population of Russia lived and died practically without medical care. They were treated, if at all, by midwives and occasionally by feldschers, the latter being medical assistants of a type peculiar to Russia who have completed four years in the gymnasium (about equivalent to our grammar school graduation) and haye then spent three or four years in special training which includes elementary anatomy, physiology, with a little bacteriology, pathology, and the like. Fully trained physicians were known in the country only as government officials who made their appearance on the occasion of an autopsy or of some official inquiry.

The zemstovs or rural constituent assemblies were created in 1864 by Alexander II. They are elective bodies which conduct the local government of provinces, and of the rural districts within the provinces, and at present they exist in between 35 and 40 of the 50 provinces of European Russia. Members of the zemstvos under the old regime were chosen by a special electorate including owners of a specified amount of land or property, representatives of educational and benevolent institutions, and commercial companies. Under the republic the basis is of course universal suffrage and far-reaching changes in personnel are taking place as a result. The assemblies of provinces and districts meet annually to legislate and to elect the permanent zemstvo administrative organization. Zemstvo activities deal with problems of local taxation, road construction and maintenance, local postal service and the like, as well as with education and health protection. In 1890 the original privileges of the zemstvos were limited by giving to provincial governors wide powers of veto over their acts. Under the republic, however, the provincial zemstvo will exercise powers essentially similar to those of our State legislatures, while the district zemstvos will constitute units somewhat analogous to the county governments in certain of our Southern States.

When the zemstvo organization was created there were hospitals in the larger centers of population controlled by the provincial governors and there were a few small hospitals, chiefly served by feldschers, for the peasants of L'Etat and L'Apanage. The emancipated serfs were wholly unprovided for, as were the industrial workers, with the exception of the miners in the province of Perm. Altogether there were turned over to the newly organized zemstvos, 32 provincial hospitals with 6,200 beds and 303 district hospitals with 5,100 beds. These hospitals were for the most part in very bad repair, highly insanitary, and grossly mismanaged. There was rarely provision for adequate isolation of communicable diseases and it is small wonder that "the necessity of entering a hospital was regarded as a chastisement from God."

The idea of furnishing real medical care, not only to the city dweller but to the peasant in the remote rural district, seemed to many observers in 1864 too Utopian even to be thought of. The difficulties are indeed great. In some regions villages may be a mile apart with 50 inhabitants per square mile. In other regions villages may be 5 to 15 miles apart with 5 to 10 inhabitants per square mile. Yet it was to this Herculean task that the zemstvos promptly addressed themselves. At first a compromise was attempted by confiding the routine treatment of disease in rural districts to feldschers under the supervision of itinerant physicians. About 1870, however, the waste of the time of the physician, and the inadequate service rendered by the feldscher, led to the introduction of the system of fixed medical districts each provided with a small hospital and a qualified physician. Itinerant service was defended as cheaper and more democratic, but the stationary plan has gradually won its way and become almost universal except in the very sparsely settled districts.

A large part of rural Russia is now divided into the medical districts (alluded to above), each of which centers about a small hospital or dispensary. Medical care is always given without charge and there has been a steadily increasing tendency to make all dispensary and hospital treatment free as well. The care of the sick is recognized by the zemstvos as a natural duty of society rather than as an act of charity.

Aside from this purely medical work, which was their original function, the zemstvo physicians in most provinces are extending their activities along preventive lines, while in such provinces as Moscow, Petrograd, and Kherson there are completely organized sanitary bureaus aside from the regular zemstvo medical staff. The relation between the prevention of disease and the free medical care of the poor is, however, throughout a very close one, and it is interesting to note that this has come about by the expansion of a state medical service along preventive lines, while with us the reverse process is taking place, health departments, originally organized for preventive work alone, developing as an offshoot provision for medical examination and clinical care.

The province of Moscow has perhaps the most highly developed organization for the promotion of zemstvo medicine to be found in Russia. It supports at the present time approximately 100 hospitals—one for every 10,000 to 15,000 inhabitants. Each hospital has from 20 to 60 beds and a personnel on the average of two physicians, four feldschers, and four sisters (nurses). The larger establishments include 16 to 20 beds for general use, 5 to 12 for communicable diseases, and 3 to 4 for maternity cases. Mental cases are cared for in special institutions maintained by the provincial zemstvos. Each hospital has its dispensary (averaging 100 visits a day) and all medicines, as well, of course, as all medical care, are given free. Home visits are made by the regular zemstvo physicians only in serious cases. Financial aid is often given to women in childbirth and to invalids who cannot be brought to the hospital.

The province of Saratov offers a good example of well-organized zemstvo medicine in a smaller and more rural district, which was well illustrated by a special exhibit at the Dresden Hygienic Exposition (Erklärung zu den Exponaten der Saratower Gouvernements Semstvo auf der Internationalen Hygiene Ausstellung in Dresden im Jahre, 1911. Saratov, 1911). The provincial zemstvo in 1911 maintained a general hospital of 200 beds and a psychiatric hospital of 460 beds for a population of somewhat over 3,000,000. The district zemstvos maintained 123 medical districts with 78 hospitals and 1,106 beds (one hospital bed to 2,525 persons). In addition to the 123 medical districts, each of which had its own physician, medical assistance was offered by feldschers or other medical helpers at 55 other points. Forty-five of the medical districts had a polyclinic only, 9 had 4-bed hospitals, 30 had 5 to 10 bed hospitals, and 2 had hospitals of more than 40 beds; 525.9 clinic cases and 9.1 resident cases were treated per 1,000 population; 33.2 per cent of the provincial budget and 31.6 per cent of the district budgets were appropriated for medical and sanitary purposes (total of both amounting, however, to only about 50 kopecs per capita).

Before leaving this subject it may be pointed out that the same principle of public responsibility for the care of the sick, of all who desire such care, and not merely of those who are classed as paupers, extends to the city as well as to the country.

The city of Moscow maintained 24 public hospitals in 1915 with a total of 6,992 beds, and the number of new patients entering during the year was 72,830; 1,264,676 persons made a total of 2,969,806 visits to the public dispensaries. There is one special hospital of over 400 beds, and one special clinic, for venereal cases, while cases of this character, if not in an infective stage, may be received at any clinic. In Petrograd 12 general municipal hospitals are maintained in which on a given day in August, 1917, there were 12,311 patients. In 1914, the last year for which we were able to obtain printed statistics, there were 11,930 beds and 144,704 patients treated. The city also carries on 11 free dispensaries, which average about 450 visits a day. There are 15 public maternity hospitals with 347 beds. It may be noted in passing that in 1915, 24,808 out of 40,141 births in the city of Petrograd occurred in hospitals.

It may perhaps seem that I overstress this question of hospital provision, particularly in a discussion of *public* health. It is natural for us with our background of tradition to say "Health departments deal with the prevention of disease. The care of the sick in hospitals and at clinics is a separate problem." It is precisely because in Russia it is not a separate problem, because in Petrograd and Moscow and other cities the division of hospitals is as essential a part of the health department as the division of sanitation or the division of sanitary statistics, that the matter is deserving of special emphasis.

The history of medical inspection of school children in the United States seems to me very significant in this connection. The physician was first sent into the schools in Boston in 1894 to detect cases of communicable disease, to protect one child from another by the exercise of a traditional type of police function. A suggestion that the eyes and teeth of school children should be cared for at public expense would at that time probably have been stigmatized as socialism of the most unmitigated kind. Yet very soon after the physicians actually got out among the children they began to find that non-communicable physical defects were far more numerous than germ diseases and equally in need of preventive care. So today the school doctor devotes only a small part of his time to protecting one child against another, and a large part to the task of enabling each child to realize its largest potencies of physical health and vigor. In the fulfillment of this task he has not hesitated to call in the nurse to follow up cases in the home and persuade parents of the need for treatment, nor to demand and secure the organization of clinics of half a dozen different types for those who are willing but financially unable to secure treatment in other ways.

In our health campaign among adults we are, as it seems to me, passing through essentially the same stages. We have remedied the grosser environmental evils of earlier days. We have had much success in checking community infections. Now we are facing the great problems of tuberculosis, of gonorrhea and syphilis, and of the degenerative diseases of later life, as the great public health problems of the next decades. We know that the first step in solving these problems is education, but that general education will not accomplish much without the special kind of education of the affected individual that arises from a thorough medical examination. In the case of tuberculosis we have provided clinics and sanatoria and hospitals, though not nearly enough. In the case of venereal disease we are making a still more inadequate beginning; but the principle is dawning upon us that clinics and hospitals are not separate and distinct from the public health campaign but among its most important and most vital organs of offense.

The task of the public health administrator is to prevent disease and death, and since the funds at his disposal are always limited it is his duty to use those funds in such a way as to secure a maximum result. During the last few years it has become increasingly clear that one of the most fruitful of all lines of public health endeavor is the early treatment of incipient disease. At the present time the vast resources of modern medicine are being used with only a small fraction of their possible potency, because the physician is usually called in when it is too late for substantial results to be secured. This waste of the possibilities of medical knowledge will continue just so long as medical care depends on the private initiative of the patient. The average citizen will not consult a physician at his own personal cost unless he is actually suffering from disease. From such considerations as this the tendency toward a wider and wider expansion of state medicine would seem to be inevitable and desirable. Only by the freest and most ample provision of clinical and hospital care, at public expense, and as a public service, will the resources of medicine come to be utilized effectively for the *prevention* of disease. I do not know how this will be brought about, whether by expansion of the health department clinics which we have begun to organize or through the medical benefit feature of some plan for health insurance. Somehow, however, a great expansion of clinic and hospital service seems essential, as a public health measure and not as a phase of poor relief. As this tendency develops we shall find a study of Russian zemstvo and municipal medical administration increasingly interesting; while Russia, on the other hand, if she is to cope successfully with such tremendous problems as tuberculosis and infant mortality, must add to her state medical service the machinery for public health nursing and the general education of the public along hygienic lines which we have developed on this side of the ocean.

FOOD AND ITS RELATION TO HEALTH*

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IN discussing foods and their relation to bodily health, we are frequently asked the question: Why is it necessary for us to estimate the value of food in terms of calories, and what is meant by calories or caloric value of foods?[1] This question is easily answered and understood if we can be made to realize that most of the food that we put into our bodies is put there for exactly the same reason that coal is put into the firebox of the locomotive by the fireman. His object in putting coal in the firebox is that he may obtain, as a result of combustion, heat and potential energy to drive the locomotive; in other words, we eat to produce heat and energy to keep our bodies warm and to enable us to do the work we are called on to perform. The food that we eat, however, varies somewhat from the coal used by the fireman in this respect. All of the food that we eat is not converted into heat or energy, as some of it is used for the purpose of furnishing material to build up and keep our body tissues in good repair, while some of it, particularly fats, is assimilated by the body to be held in storage for future use. We may, therefore, regard most of the food that we eat as fuel for our bodies, just as the coal is fuel for the locomotive.

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In estimating or measuring the value of food fuel or coal fuel we cannot estimate it in pounds and ounces, or in quarts and pints, but we must estimate it in calories which are nothing less than scientifically established units of heat and energy. Thus when we speak of food values in terms of calories we have no reference whatever to the bulk or weight of the food that we eat. It is, therefore, necessary for one engaged in the preparation of food for human consumption to be familiar with calories and caloric values of different kinds of food, if he desires to know how to prepare well-balanced meals in order to get out of the foods served the greatest possible value for money expended, the maximum amount of heat and energy and repair material, and the greatest amount of efficiency and health. A careful perusal of the footnote * at the bottom of the page will enable almost anyone to get an intelligent idea of what the word "calorie" means.

Every article of food that we put into our bodies, either to build up and repair tissues, or to furnish heat and energy, belongs to one of the three following groups:

1. Proteins, such as lean meat, fish, eggs, cheese, milk, peas and beans.
2. Carbohydrates, such as sugars, starches, vegetables, fruits and grains.
3. Fats, such as butter, lard, suet, vegetable and nut oils.

In addition to the above, we also need water. Some of the proteins, like milk and lean meats, and many of the carbohydrates, especially fruits and vegetables, supply us with large quantities of water, but we need more water than we can get in this way. A number of mineral salts are necessary for our bodies and these we get largely from eating fruits and vegetables.

Sulphur, however, is supplied to us in our protein foods; and from milk we get a large amount of calcium salts so important in connection with phosphorus in building up strong bones and teeth. This is the reason why milk is such an essential element in the diet of growing children. "It is said that 100 calories of milk yield as much calcium salt as 2,400 calories of white bread or meat." We get iron in almost all of the vegetables, notably in spinach, and in some fruits, such as strawberries, grapes and raisins. Many mineral salts, other than those above mentioned, are needed in the body in small amounts, notably, potassium, magnesium, iodine and others, and we generally get the necessary supply of these in all fairly well-balanced diets.

We need proteins for building and repairing our body tissues, and carbohydrates and fats for the production of heat and energy, but we differ somewhat as to the amounts of these different foods required owing to the varying factors, such as age, size and the kind of occupation in which we are engaged, and physical and digestive peculiarities. A young growing person needs proportionately more protein than a person in adult or advanced life, all things being equal, because his body needs the protein for growth and development of his body tissues in addition to that which he needs for repair purposes. A person in middle age or advanced life needs less protein than a young person for two reasons: First, he is not building up new tissues in his body; and second, as a general rule, he is expending much less muscular effort, so that he needs proportionately less repair material. A very large muscular person, as a rule, needs more food of all kinds than a slight, small person. The occupation we follow determines, to a considerable extent, the amount of food that we actually need. Generally speaking, a bank clerk or a bookkeeper does not need as much food as a store clerk or a street car conductor, and a store clerk or street car conductor does not need as much food as a blacksmith or an iron worker, or a hard-working farmer, an athlete, or a mechanic who may be called on to work with heavy tools or to swing a sledge hammer all day. We meet with different people of about the same size and physical make-up, some of whom are small eaters, others of whom are hearty or heavy eaters. Both classes seem to get along nicely as far as weight, strength and energy are concerned. In the former class, that is the light eaters, there is no doubt some physical or digestive or assimilative peculiarity by which a large proportion of the energy and heat furnished by the food is made available for body uses.

Different kinds of food vary widely in caloric value when we compare them by weight and bulk—that is, a pound of one kind of food may contain many more calories than a pound of some other kind of food, so we see again that we cannot estimate food values in pounds and ounces or according to bulk. In consequence of many complications and complexities, no hard and fast rule can be laid down regarding the absolute caloric value of different foods according to weight. However, it is safe to say that as a general rule most of the carbohydrates and proteins contain, approximately, 4 calories of food value in each gram of weight, and that pure fats, like lard, butter and vegetable and animal oils, contain about 9 calories per gram of weight. This rule is a fairly accurate and safe one for the guidance of the housewife or cook. It might be well to re-

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* "The process of oxidization of material and the transformation of energy in the body are less simple than in the engine and less clearly understood. Late research, however, has given us ways of measuring the energy latent in coal, wood, and in food materials as well. This is most generally done in the chemical laboratory by an apparatus called the bomb calorimeter. The amount of heat given off in the oxidization of a given quantity of any material is called its 'heat of combustion,' and is taken as a measure of its latent or potential energy. The unit commonly used is the calorie, i. e., the amount of heat which would raise the temperature of 1 kilogram of water 1 degree C., or, which is nearly the same thing, 1 pound of water 4 degrees F.

member that a gram is approximately equal to 17 grains and that there are approximately 28 grams in an avoirdupois ounce, so that it is quite an easy matter, if we bear in mind the above general rule, to determine the number of food calories in an ounce or a pound of various kinds of food.

In passing, we might say that it is quite surprising to learn how by instinct the ordinary portions of food served are made to correspond to approximately 100 calories. The following quotations from Fisher and Fisk serve to illustrate this fact:

> "It will help to give a picture of food values, if, before going further, we note how much it takes of some of the common foods to make a given amount of food value, say 100 calories. We find 100 calories in a small lamb chop, weighing about an ounce, in a large egg, about 2 ounces; in a small side-dish of baked beans, about 3 ounces; in 1½ cubic inches of cheese, about an ounce; in an ordinary side-dish of sweet corn, about 3½ ounces; in one large sized potato, if baked, about 3 ounces; if boiled, about 4 ounces; in an ordinary thick slice of bread, about 1½ ounces; in one shredded wheat biscuit, about an ounce; in a very small piece of sponge cake, about an ounce; in a third of an ordinary piece of pie, about 1½ ounces; in three teaspoonfuls or 1½ lumps of sugar, about 1 ounce; in a dozen peanuts, about 2-3 of an ounce; in eight pecans, about ½ ounce; in four prunes, about 1 ounce; in two apples, about 7 ounces; in a large banana, about 4 ounces; in a half a cantaloupe, about 9 ounces; in seven olives, about 1½ ounces; in a very large orange, about 10 ounces; in an ordinary pat of butter, about ½ an ounce; in a quarter of a glass of cream, about 2 ounces; in a small glass of milk, about 5 ounces."

As intimated above, not all of our food can be regarded as fuel food proper. Fats, and carbohydrates, such as sugars and starches, consisting as they do, of carbon and hydrogen, are the principal combustible foods; hence these are the foods which give us heat and energy. The protein or nitrogenous foods like meat, milk, eggs, fish, cheese, dried beans and dried peas are the foods that are used principally to furnish the building and repair material for the body. To use a familiar illustration, we can compare the protein foods we eat to the oil which is used in the automobile. The purpose of the oil in the automobile is to keep the machine in good running order. We can compare the carbohydrate foods, which we eat, to the gasoline in the automobile; the combustion of the gasoline in the automobile drives the machine, just as the combustion of the carbohydrate foods in the human body gives it energy to enable it to do the work that it is called upon to perform. The different kinds of food, to a certain extent, can do each other's work; thus some protein foods can, under certain conditions, be burned in the body and do the work of the carbohydrates. While some of the proteins, as stated above, can take the place in the body and do the work of the carbohydrates, the latter, however, cannot take the place of what are called albuminoid proteins in the process of building up new tissues and repairing worn and wasted ones.

As a result of a large amount of experimentation, the conclusion seems to be pretty firmly established that a well-balanced diet furnishing a total of from 2,500 to 4,500 calories of food value of different kinds is sufficient for all the daily food needs of the average man or woman taken, of course, with reference to age, size, occupation and physical peculiarities.

In discussing a balanced ration for the human animal, we are told by many that it is practically impossible to work it out on any rational basis; that each individual is a law unto himself; that "what is one man's meat is another man's poison." In answer to this we can point to hundreds of experiments and observations which show conclusively that men under the same conditions of weight, age and occupation require practically the same amount of different kinds of food and expend about the same amount of energy.

Mary Swartz Rose, in a recently issued book, "Feeding the Family," says in relation to the above: "This is further verified by studies of food consumption by men of the same class, doing the same kind of work, in different parts of the world, as the following table strikingly illustrates:

	Calories.
Farmers in Connecticut.........	3,410
Farmers in Vermont...........	3,635
Farmers in New York..........	3,785
Farmers in Mexico............	3,435
Farmers in Italy...............	3,565
Farmers in Finland............	3,474

Average, 3,551 calories."

As far as energy requirement is concerned, nutrition is an exact science; a definite amount of work calls for a definite amount of energy in the form of food. The only reason we are not forced to stop working as soon as food is withheld is that we are able to carry stores of fat (and a little carbohydrates) as reserve fuel, and also to draw if necessary on our own body protein. So men have fasted 30 and 40 days, but the body becomes more and more impoverished, and when the reserves are exhausted there must come fuel in the form of food, or all work stops and death is the result.

It has been demonstrated that if the above allowances are very much exceeded, harm results instead of good, because the human body cannot digest and assimilate for any length of time a larger number of calories than is above specified. It is like putting too much coal in the firebox of a locomotive—perfect combustion cannot be attained and heat and energy are lost instead of being utilized; a brake, so to speak, is put on the machinery, and in the human machine the effort to eliminate the waste products due to over-eating overcomes the safety factor in the liver and kidneys, with incurable disease as the frequent result. If more food is eaten than is actually used by the body, the surplus is sometimes stored in the body for future use. This is especially true of the fat foods which are the most concentrated form of body fuel. The fat thus stored up is frequently utilized by the body in illness or, at times when fat cannot be eaten, digested and assimilated, and under such circumstances the body loses weight and becomes emaciated.

If different bodies need food sufficient to furnish from 2,500 to 4,500 calories of heat, energy and repair material, the question necessarily arises: What percentage of each of the three kinds of food is necessary to constitute a well-balanced diet? This matter has been subjected to careful experimental study, and most authorities now seem to agree that for a normal, healthy person, a well-balanced diet should consist of 10 per cent. protein food, 60 per cent. carbohydrate food, and 30 per cent. fat food always estimated, of course, on the caloric basis, and not according to weight or bulk. In addition to the above, a large amount of water is needed over and above that which we get in the above named foods. However, in young growing persons and those who are obliged to resort to a large expenditure of muscular energy, a somewhat larger percentage of protein may be necessary, particularly meat foods. The amount of meat required depends upon the amount of muscular exercise taken more than on any other one factor, so that it may be safely said that any person who takes a small amount of muscular exercise, who follows a sedentary occupation, and who eats freely of red meat two or three times a day, is extending a cordial invitation to toxins and uric acid to come and take up their abode within his physical domain, where, in time, they may prove to be very troublesome tenants.

Meat, however, contains certain elements that are of great value in building up and repairing muscles and body tissue, and as such is a valuable article of diet, but it is a well-known fact that most American people eat altogether too much meat.

It is not an easy task to change radically the habits of people who are accustomed to eating meat three times a day. It can be done, however, and many other more economical foods can be substituted for meat with benefit both to health and to the purse of the consumer. With milk, butter and eggs, with fish, vegetables, cereals and fruits, it is a poor cook who cannot produce a palatable and sustaining breakfast and lunch.

As a rule, our diet should vary somewhat in hot and cold weather. In cold weather we need more of the heat-producing foods and in hot weather we should partake more freely of fruits and vegetables. These last named foods, however, should at all times be eaten very freely by people in middle or advanced life. In an extremely cold climate large amounts of fat are needed which are not needed in a hot climate. The Greenlander enjoys the eating of whale or walrus blubber and tallow candles, but they would hardly be appreciated by the Hottentot or a Son of the Desert. None of us need quite as much food in summer as we do in winter, and most of us eat at all times more protein food than is desirable or necessary. By eating less protein food, especially meat and eggs, we will enjoy better health and be able to economize in the cost of our food ration. A common mistake is that by eating large quantities of meat, eggs and cheese we can better perform work that requires the expenditure of a large amount of muscular energy. The fact that it is foods like bread, oatmeal, cornmeal and vegetables and sugars that supply us with energy must be impressed on the minds of people. Another important thing for people to know is that protein foods consisting, as they do, largely of nitrogen are, if not promptly digested and assimilated, liable to quickly decompose in the intestinal canal and produce intestinal toxemia or auto-intoxication with all their train of evils, such as gout, persistent headaches, nervousness, insomnia, arteriosclerosis and so-called biliousness, as well as degenerative diseases of the liver and kidneys, the latter caused by efforts on the part of these organs to eliminate the products of decomposition.

It is becoming a generally recognized fact that our large adult mortality in this country can, to a certain extent, be attributed to over-indulgence in protein foods, especially lean meats. Other protein foods can take the place of meat and eggs in our diet, such as milk, dried beans and peas, which are rich in protein, and fish foods of various kinds. Milk is a much better protein food for children and even for many adults than meat and eggs and, even at its present high price, is a much more economical food. It may be well to know that good bread and butter with milk is an almost ideally well-balanced diet.

It is advisable for middle-aged and elderly people to have a large amount of vegetables and fruits in their diet, not so much on account of the food value they contain, which is generally low, but for the fact that they leave a considerable amount of undigested residue of fibrous or cellular tissue which plays a very important part in promoting the normal movement of the bowels.

In the foregoing pages food has been considered in its relation to health. An effort has been made to show the importance and necessity of a well-balanced diet for man, and facts and figures have been presented which it is hoped will enable anyone to determine what is meant by a well-balanced diet and how it should be prepared. In view of the tendency of prices of food to soar higher and higher in these trying times, it may be profitable briefly to consider food from the standpoint of economy. A mistake that is quite commonly made, mostly by those who can least afford it, is to purchase high-priced foods in the belief that what costs the most money is cheapest and most economical in the long run. This rule may hold true with reference to many things, but it certainly is not true as applied to foods. There also are many people who seem to think it derogatory to their dignity and social standing to take a basket and go to the markets or stores to buy food and to carry it home in order to save delivery charges. They also seem to think it a mark of inferiority to buy bread one or two days old because it is generally cheaper than fresh bread (and incidentally much better), or to buy the cheaper cuts of meat which, with a little skill in cooking, can with vegetables be made into tasty and healthful dishes which anyone might be proud to have on his table. From the standpoint of economy the best foods are the cheaper cuts of meat, fish, flour, cornmeal, oatmeal, milk, potatoes, beans and vegetables. These are all plain, substantial food materials that do not require superior skill in their preparation for the table and are just as nourishing and wholesome as are many of the higher priced foods. Milk especially is not as fully appreciated as it should be as an article of diet. A quart of good milk is the equivalent in food value of six eggs. The milk costs from 10 to 15 cents while the eggs cost about 30 cents at prevailing prices, yet the quart of milk as an article of diet is infinitely more to be preferred, especially for children. Beans, either baked or in soup, constitute a valuable protein food that can take the place of meat in the diet. A bread made of wheat flour with some cornmeal and potatoes is very nourishing, and its use helps to solve the wheat problem for the government.

Extravagance and wastefulness in the purchase and use of food is a habit quite common among American people and one that must be curbed. Many of us buy more food than is used and too much of it finds its way into the garbage can, which we are cautioned to keep empty.

It may help us to realize the great importance of a well-balanced ration for the human animal from the economic standpoint as well as from the health standpoint, if consideration for a moment is given to the important work performed by the Federal and State governments in teaching the farmers of the country how to prepare well-balanced diets for cattle, especially cows, in order to help solve the purely economic problem of how to get a greater production of milk and cream. Hundreds of thousands of dollars have been spent in this protean task with far-reaching and beneficial results, so that today we see not only a largely increased production of dairy products from the same number of cows but better physical health on the part of the animals. We learn also that cows which are fed on a properly balanced diet give birth to stronger and healthier calves. Now if these wonderful improvements can be brought about by properly feeding cattle, may we not indulge the hope and belief that if our growing boys and girls are reared on a properly adjusted diet they will develop into a stronger race of men and women than we see today, and that the future children born to them will come into the world stronger and more fit to survive than the babies of the present? Thus, by teaching people to properly feed their bodies we are teaching them how to have better health, and by so doing we are helping them to solve the greatest economic problem in the world, for all political economists tell us (what is now very self evident) that the greatest economic asset of a nation lies in the health and strength of its people.

A final and very forcible reason why the human animal needs to have his diet supervised lies in the fact that man is about the only animal that will generally eat when he is not hungry and drink when he is not thirsty. He will also eat and drink things that he knows will do him harm instead of good, and these things he generally does without much persuasion.

From the foregoing remarks the following summary of conclusions may be drawn: We must learn to estimate food values in terms of calories, and to determine the cost of food in calories. Estimating the cost of foods according to caloric value is not a difficult matter if the general rule laid down at the beginning of this paper is borne in mind, i. e., that in a gram of carbohydrates there are generally 4 calories of food value, and in a gram of fats like butter, lard and oil, there are approximately 9 calories of food value. If we want to find the cost of enough butter at 48 cents per pound to produce 100 food calories we proceed in this wise: An ounce of butter at the above price would cost 3 cents, and in an ounce there are 28 grams. If we multiply 9 calories by 28 we get 252 calories in an ounce of butter which costs 3 cents; one calorie will cost 3/252 of a cent and 100 calories will cost 300/252 of a cent or practically 1 1-5 cents. We figure the cost of carbohydrate calories in the same way, using 4 for the multiplicand instead of 9.

A one-sided or poorly balanced diet must be carefully avoided. Greater skill in cooking and preparing foods for the table must be achieved. A knowledge of the consumption of food materials must be acquired. A study of dietaries and dietary standards is an absolute necessity. The knowledge of adapting foods to bodily needs must be understood as well as a knowledge of the pecuniary value of different foods. Waste and extravagance in the use and purchase of foods must be discouraged. A knowledge of the deleterious effects of some foods on the body is very essential. A knowledge of the various topics alluded to in these conclusions will enable one to know that "the most healthful food is that which is best fitted to the needs of the user; the cheapest food is that which furnishes the largest amount of nutriment at the least cost, and the best food is that which is most healthful and cheapest."

INDUSTRIAL HYGIENE *

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PREVENTIVE public health medicine has in the past several years suffered from retarded development, despite the fact that our knowledge of methods for the prevention of disease has been greatly enriched. In the last two decades, the application of this knowledge in public health administration has been fitful and sporadic. State, municipal, and rural public health organizations are altogether too prone to concentrate upon some more or less narrow province of public health work, and to create a number of independent divisions without any well-knit, coherent and harmonious program, which would unite them all as part of a broad and comprehensive campaign in the prevention of disease.

When child hygiene became acknowledged some years ago as a distinct phase of public health effort, which brought together under one administrative division, the scattered and unrelated attempts to prevent infant mortality through prenatal and postnatal work, through supervision of children during the pre-school age, as well as through school medical inspection, we had an excellent illustration of a progressive and broadly conceived plan of attack against the causes of illness and death which occur up to the period of adolescence. At that point apparently, development has, generally speaking,, ceased. Logically, the work of public health organization from an administrative standpoint should have resulted in the extension of the principle of child hygiene organization to include adolescent and adult hygiene. Our failure to follow this line of development has resulted in a confusing and sometimes even chaotic condition with respect to the prevention of those diseases which originate or are aggravated and confirmed during the period of adolescence, as well as of those diseases which we have come to recognize as in part or large measure preventable and which occur during the period of adult life. Attempts are everywhere being made to control venereal diseases, tuberculosis, pneumonia, and other communicable diseases, as well as degenerative diseases, but without linking them up with each other as parts of a well-defined offensive.

The result of our failure as public health officials to establish adolescent and adult hygiene as distinctive branches of public health medicine, has been to single out child hygiene work for special distinction. No public health official can fail to recognize the great importance of preventing infant mortality and of protecting child life, and the writer does not wish to be misunderstood as desiring in the slightest to disparage or minimize the value of an intensive campaign to protect the health and lives of children; but side by side with this public health endeavor, there should be an equally intense and unrelenting campaign to prevent the causes of disease and death which operate during the period when the child is growing to womanhood or manhood, and during the subsequent period as well. Human life is precious without regard to age, and should be conserved with equal solicitude in all age groups. The army of young persons who enter industry and those in the prime of life, upon whom the family and the community have lavished money and personal care to protect them from disease in order to prepare them to render service to the community and to the family, are far too often the victims of preventable disease. This is an appalling tragedy when viewed from the standpoint of the individual and the family, and of society as a whole. Yet we can point to no public health defensive organization which is comparable to that of child hygiene bureaus. This must stand as a reproach until the creation of bureaus of adult hygiene are established, and the children of men without regard to age, enjoy in fair measure the protection of public health agencies.

The work in industrial hygiene, which it has been the privilege of the writer to organize for the Department of Health of the City of New York, has, since 1915, when it was initiated, more clearly and definitely become the expression of a tendency on the part of the New York City Department of Health, to bring the

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 22, 1918.

intensive activities in the prevention and control of tuberculosis, venereal diseases, and other communicable diseases, of occupational diseases and degenerative diseases, into closer union. The introduction of industrial hygiene has reacted on the formerly disjointed and unrelated activities of the Bureau of Preventable Diseases to produce harmony, and is tending increasingly to make the work of the nurses and physicians in each of these respective fields supplement and enhance the value of the other divisions of work which are comprised in this union of activities.

In the course of a discussion of the chief lines of effort in connection with industrial hygiene which will follow, the relations of these diverse activities will be indicated or implied, and the writer hopes that it will then be made clear that any effect which this work will ultimately have in preventing disease and death among those belonging to the age group known as adolescents or minors, and among adults, will not detract from the effectiveness of the campaign of protecting child life, but on the contrary, will be seen to be a strengthening of the entire line of defense which it is the business of public health officials to establish, rather than a shortsighted concentration upon a single sector of the field of action.

THE REPORTING AND INVESTIGATION OF CASES OF OCCUPATIONAL DISEASE.

One of the chief essentials in industrial hygiene is the reporting of occupational disease by private physicians and by institutions which care for the sick. In the City of New York, the following are reportable diseases: arsenic poisoning, bisulphide of carbon, brass, caisson, carbon monoxide, dinitrobenzine, lead, mercury, methyl alcohol or wood naphtha, natural gas and phosphorus poisoning. This is by no means as comprehensive a list of occupational disease poisonings as the varied industrial processes carried on in shops and factories in the City of New York would warrant, and on the other hand, there are certain poisons enumerated in our list, which are only of academic interest in the City of New York. At all events, it is of the utmost importance that private physicians and those serving in dispensaries and hospitals, should be roused to a recognition of the great importance of promptly reporting all cases of occupational disease. This presupposes, of course, that the medical colleges devote adequate attention in their curriculum to the diseases of occupation. In reality, however, there are few medical institutions in the United States in which even a smattering of information with reference to occupational diseases is imparted to the student. In the City of New York, Bellevue Medical College is the only one of the larger institutions which has included a course in industrial hygiene and occupational diseases in its curriculum. Moreover, our hospitals and dispensaries in the City of New York almost wholly neglect to give special attention to the subject of occupational diseases. Dr. David B. Edsall of the Massachusett's General Hospital has conclusively demonstrated that an intensive effort to assay and appraise the occupational factors, which may be directly or indirectly responsible for disease conditions met with in dispensary or hospital service, results in the discovery of a very great many conditions which are undiscovered, or at best diagnosed only on rare occasions even by the very best clinicians, if these factors are not diligently searched for. The New York Academy of Medicine performed a signal service in adopting resolutions on March 7, 1918, commending to colleges, private physicians, dispensaries, hospitals, and to other agencies, the special study of occupational diseases and industrial hygiene.

The reporting of cases of occupational diseases to the Health Department gives a clue in practically every instance to the existence of industrial conditions which are a hazard to health and to life. Promptly upon receipt of such information, an effort is made to ascertain definitely the location of the workplace in which an occupational disease was contracted. A medical inspector is promptly sent to investigate the factory, taking into account not only the conditions which led to the specific case of occupational disease which has been reported, but including as well a thorough investigation of all other sanitary conditions which may directly or indirectly be responsible for disease. The reporting of cases of anthrax, for instance, has led to the study of one hundred and two shaving brush factories in which exhaustive bacteriological and other studies have been made to ascertain whether it was practicable to demand the disinfection of the various species of hair, which are employed in the making of brushes. The report of but a handful of cases of anthrax in the City of New York, led not only to the study of the shaving brush manufacturing industry, but to other industries in which anthrax was also present as a hazard. As the result of these studies, the Department of Health of the City of New York has in preparation a set of regulations which will be submitted for discussion with those having expert technical knowledge in the manufacture of shaving brushes, in the hide and leather industry, and in related branches of work, before such regulations are adopted by the Department of Health. This is cited as the typical mode of procedure of the Division of Industrial Hygiene.

In December, 1915, the report of a hospital that it had received a patient who was suffering from wood alcohol poisoning, led to an investigation which resulted in the discovery of three other cases, two of which resulted fatally, and one of which terminated in blindness. The four cases were found among a group of workers who had been employed in applying shellac to the interior of beer vats. Each of these men had on a certain day crept through the narrow openings in the bottom of the vats, and had been busily engaged in their work of shellacking the interior of these vats, with a mixture containing 52 per cent of wood alcohol, without any oversight or restriction as to hours of work, and without any provisions for removing the fumes of the wood alcohol. These four cases of poisoning occurred within a period of forty-eight hours. The history of each of these cases was almost identical. Toward evening, on emerging from the vats, the men felt an overwhelming sense of weakness and dizziness within a period of an hour or two, and, after being helped to their feet and escorted by fellow workers to their homes, them complained of nausea and vomited several times, experienced dizziness and dimness of vision, were unable to see large objects which were near them, and complained of severe abdominal pains. Within a short time unconsciousness supervened, and the men presented signs of complete collapse. The two fatal cases died within less than eight hours after leaving their work. One man apparently made a complete recovery after a prolonged stay in the hospital, but was lost sight of thereafter, and the other survived but was affected by partial blindness which became progressively worse, and in a short time terminated in complete blindness. This man sued the persons in charge and gained a verdict of $25,000, which, on last account, was still before the Court of Appeals for final decision.

The work of the inspectors of the Division of Industrial Hygiene in this instance not only brought to light the tragic facts in these cases, but resulted in negotiations with associations of brewers, who agreed finally to prohibit the use of wood alcohol in shellac mixtures used for painting the interior of beer vats, not only in the City of New York, but in adjacent territory in the State of New York and New Jersey as well.

Unfortunately physicians in hospitals have been very remiss in reporting cases of occupational disease to the Department of Health. In 1917, the third year of our educational efforts to secure the reporting of these cases, there was a total of but ninety-four cases reported by private physicians, hospitals and dispensaries combined, whereas the inspectors of the Division of Industrial Hygiene, of whom there were but four to cover the entire city, discovered through their personal efforts seventy-four cases, despite great handicaps. Instances might be multiplied in which physicians employed by companies, manufacturing products which involve the handling of dangerous substances, have failed to notify the Department of Health of a single instance of occupational poisoning among many thousands of workers who are employed in handling such dangerous poisons as aniline, lead, mercury, and other equally dangerous chemicals. Prompted by curiosity, we made a special investigation in a factory manufacturing flash-lights and discovered twenty-three cases of lead poisoning in the storage battery department which had not been reported by the company's doctor. Physicians should be awakened to their moral responsibility in this matter.

We have a knowledge of many establishments in which hazardous processes are carried on involving thousands of men, women and children, whose work places we have not been able to inspect and to supervise to eliminate conditions which threaten health and life, because of the inadequacy of our staff of but four medical inspectors through whom we are expected to maintain supervision over forty thousand factories and approximately eighteen thousand mercantile establishments and shops in the city. The State Labor Department whose jurisdiction extends over factories in every city, town, and hamlet where industrial establishments may exist in this State, has also a staff of but four inspectors. Manifestly, the three million or more workers in the State of New York are not receiving the benefits of supervision and control over industrial sanitary conditions which may directly or indirectly cause disease, to any appreciable degree; and manifestly, too, physicians and institutions who in their private or hospital practice are seeing hundreds of thousands of cases annually, are not prepared through lack of a proper preliminary education to recognize the influence of occupational conditions, or, if perchance they possess such knowledge they are flagrant offenders against the law in failing to report cases of occupational disease. The height of their offending does not consist in their failure to observe the law, but rather in the neglect of a community service to which they should be dedicated by the high ideals which have always actuated those engaged in the practice of medicine.

Time does not permit of a recital of the contributions made by the Division of Industrial Hygiene of the Bureau of Preventable Diseases of the Department of Health of the City of New York, especially in connection with a study of the various conditions found in house painters and laundry workers, furriers, and others.

The war has emphasized the need of conserving man power as an aid in the crusade in defense of democracy in which we are at present engaged. If communities will heed this lesson, they will establish in their respective Departments of Health distinctive divisions for industrial hygienic service, in order that the lives and the health of the men, women, and children engaged in industry, may be protected from occupational or environmental conditions which are of a hazardous character. The need of competent industrial hygienic experts furnishes another reason why medical colleges should give great heed to this subject, and equip medical men, not only with a knowledge of occupational poisonings, but prepare them to render public health service in this field and to recognize the injurious effects produced by defective ventilation, the presence of various kinds of dust, improper lighting, or the conditions which produce degenerative diseases of the heart, kidneys, arteries, and nervous system through undue muscular exertion or through the effect of fatigue. As communities come to recognize the overwhelming importance of preventing diseases through proper supervision of the industrial environment, the need for adequate preparation of medical men to serve as guides and overseers in this work, will, it is hoped, become increasingly apparent to those in charge of the medical curriculum.

Special Research Activity in Industrial Hygiene.

A vast unexplored territory in preventive medicine awaits those who will give special study to many conditions which are incident to employment, and which are as yet little, if at all, understood. It is not only through the reporting of occupational diseases, but also through complaints brought to the attention of officials, by working people themselves, that the necessity for special research and study in fields of industry which have not yet received attention, are brought to light. The medical inspector who visits a factory, with a view to acquainting himself with the dangers which may lodge in the various industrial processes or in the environment, must be equipped not only with ability to recognize the influences of faulty systems of lighting, ventilation, dust removal, and many other factors too complex and numerous to be detailed here, but he must be a good clinician as well. In connection with Health Department activities, the diagnostic clinic becomes an institution of paramount importance.

In our study of various industries, which were suspected of being of a hazardous character, we have found it necessary to establish diagnostic clinics in factory premises when we were permitted, and when conditions with respect to noise, privacy, and good lighting were favorable. These clinics were so conducted as to involve little loss of time from factory work, and it has made it possible for us to go through the entire personnel of some factory plants, making routine examinations which have compared favorably with the methods obtaining in the better class of dispensary. In some factories, this is the only way in which it is possible to obtain an opportunity to examine workers. Under certain conditions, this is entirely out of the question, either because there is no available space, or as before indicated, the noise in connection with the factory processes is excessive, or because it is impossible to secure the necessary privacy. For this reason, permanent stations for diagnosis should be established. In this connection, the writer desires to make as emphatic a plea as possible for the extension of the scope of activities of existing tuberculosis clinics of Departments of Health, where heretofore exclusive attention has been given to the diagnosis, treatment, and supervision of cases of tuberculosis. Each clinic should be made a life extension institute which, stripped of its commercial aspects, will offer to the working people of a community who cannot afford to pay for the services of a private physician, a diagnostic station to which they may come periodically to be informed as to their physical condition, and where timely attention may be directed to the beginning of a disease process, at a time when it is still subject of control. Signs point to the general diagnostic clinic as the inevitable next step. In this way individuals will be saved from untimely invalidism which throws so many into the industrial scrap heap, and the community may be spared, in a measure at least, the necessity of constantly erecting more hospitals and sanatoria to care for those who have been disabled by the lack of this preventive medical supervision. The time I hope is fast coming when it will be the just boast of communities that the need for the sanatoria is rapidly diminishing, and when workers will impeach health officials whose chief concern is to take care of industrial casualties rather than to prevent them. If all tuberculosis clinics were converted into diagnostic stations for periodic medical examination of persons in those age groups, who are no longer under the jurisdiction of our child hygiene experts, and who are unable to pay the private physician for such service, the scope of the activities of Health Departments would be very greatly widened, not only for the recognition of otherwise undiscovered tuberculosis, of occupational diseases, and of many other preventable diseases, but these stations could serve as centers of instruction in all matters affecting right living; and our efforts in the control of venereal diseases, in the dissemination of information in industrial hygiene, and to lessen the prevalence of infectious diseases, could be made to supplement those of other agencies for public health education, in a way that would materially benefit the individual and the community. We are coming to increasingly recognize that while the printed word and platform speeches reach a certain number in the community, there is no method of public health education so effective as that which comes from direct personal contact of physicians and nurses with the members of the community in the clinics, and through visits to the home, even when the latter are undertaken primarily to enforce isolation and quarantine and to exercise sanitary supervision over those affected with infectious diseases.

Miscellaneous Activities.

The introduction of industrial hygiene as a part of the Department of Health program, has brought us to the threshold of many new phases of public health activity which logically grow out of this work. The examination of minors of both sexes who are receiving a vocational training, has been begun with a view to recording definitely the physical conditions which may be found just before these individuals enter industry, and to follow up these cases by periodic medical examinations and by sanitary supervision of the factories which they enter, in order to limit as far as possible by legal supervision the development of diseases, which are the direct or indirect results of occupation. This contact with trade school students is also of value in enabling us to furnish them information, which may serve them as a guide in the recognition of unsanitary factory conditions which may injuriously affect their health or that of their fellow workers.

The establishment of clinics in night schools which are visited by large numbers of young working people, also offers many possibilities for education and health protection. Education through lectures, through publications, and especially through moving pictures, is one of the most valuable of the functions in industrial hygiene, and may be made the medium of transmitting a great deal of health information, which is not distinctively related to industrial hazards.

Co-operation with employers, in advising them as to methods for eliminating hazards to health, and of those things which by degrees tend to lessen efficiency and to reduce the normal span of the working life of the individual workers, is a valuable function of industrial hygiene, and capable of serving in the conservation of man power through the establishment of friendly and close co-operation with the managers of industry.

Our work in the examination of special industrial groups has always been accompanied by visits to the homes of the workers by special nurses of the Department of Health, who were instructed to note the conditions with respect to housing, diet, overcrowding, lack of proper sleeping quarters, and uncleanliness, which would have a direct or indirect bearing upon the occurrence of disease, whether of an occupational character, or of those in which the home environment and manner of living played the principal rôle.

In the City of New York, it was the good fortune of the writer to be able to establish friendly relations with the leaders of labor and to organize with their co-operation an alliance between the Division of Industrial Hygiene and organized labor, which is known as the Labor Sanitation Conference. This conference is the clearing house through which the workers are informed of the special activities which are being carried on for their protection, and thus the leaders are made to serve as active agents in the education of the workers, and in turn, the working groups or the labor representatives transmit complaints and suggestions to the Division of Industrial Hygiene. This alliance has brought about many excellent results in the period of little more than a year during which it has existed, and has brought the powerful influence of labor to bear on securing an increase in the appropriation of the Department of Health for the extension of its work in industrial hygiene. It has also aided in securing legislation affecting the welfare of workers, and has thus established unique precedents in co-operative work. The advantage of such an alliance must be manifest, and it is no exaggeration to say that the statement of purposes which were formally adopted by the Labor Sanitation Conference, offers not only the promise of excellent things, but has already achieved much that was intended in its organization.

Above all, it is hoped that in the foregoing sketch of the new activities in industrial hygiene undertaken by the Department of Health of the City of New York, the vast possibilities for a broad and comprehensive program for the protection of adolescents and adults engaged in industry have been made apparent. Time does not allow mention of many other activities which while subordinate, tend to dovetail the hitherto independent branches of work in tuberculosis, venereal disease, and infectious disease control, and to correlate them so that they may take their place as the logical sequence and companion efforts to those in the field of child hygiene.

Legislative Notes

BILLS INTRODUCED INTO THE STATE LEGISLATURE.

Adding new sections 701, 702, Education Law, prohibiting vivisection of animals or experiments upon living animals in the common schools or exhibition in such schools of animals which have been vivisected. The education commissioner may revoke a teacher's license for wilful violation. By Mr. Boylan. To Judiciary Committee. Printed No. S. 115. Int. 114.

Giving the Board of Regents power of supervision of experiments on living animals. The board is to designate annually on June 1 such number of persons as it deems necessary to represent it in such supervisions and to serve without compensation. By Mr. Boylan. To Judiciary Committee. Printed No. S. 116. Int. 115.

Amending sections 420 and 421, Public Health Law, and repealing section 422 and renumbering sections 423 to 445 to be sections 422 to 444, by transferring to State Health Department the Department of Narcotic Drug Control and placing a director at the head of it in place of the present commissioner. By Mr. Twomey. To Public Health Committee. (Same as A. 324.) Printed No. S. 140. Int. 139.

Repealing article 2, Public Health Law, and inserting new article 2, creating a health commission of five members to be appointed by Governor with Senate's consent. One million dollars is appropriated for a sickness fund for persons unable to provide curative treatment or nourishing foods for themselves, but which are necessary to properly fit them to perform their daily tasks. Such treatment shall be by physicians of their choice other than local health officers. Five hundred thousand dollars is appropriated for a physical examination fund for the physical examination of any wage-earning resident, or of any dependents. Seven hundred and fifty thousand dollars is appropriated for office employees and expenses of each of the sanitary districts, each county to constitute a district. There is to be a sanitary supervisor at $3,500 a year for each district, also a district clerk who is to be the fiscal agent of the commission in his district. Provision is made for district advisory boards. By Mr. Bewley. (Same as S. 1.) To Health Committee. Printed No. A 3. Int. 3.

Adding new article 11-b to Public Health Law, prohibiting the sale of proprietary and patent medicines unless the names of ingredients thereof shall be registered in the State Health Department and a sample of the preparation and all advertising matter submitted therewith. The information filed is to be regarded as confidential. By Mr. Fertig. To Public Health Committee. Printed No. A. 31. Int. 30.

Amending sections 12, 18 and 20, Workmen's Compensation Law, by providing that compensation shall be allowed from day of disability; that notice of injury shall be given within 5, instead of 10 days, after disability, and that after expiration of 7, instead of 14 days' disability, claim for compensation may be presented to the employer. By Mr. Ullman. To Judiciary Committee. Printed No. A. 44. Int. 43.

Amending sections 12, 15, Workmen's Compensation Law, by providing that no compensation shall be allowed for first 3 days of disability, instead of first 14; in case injury results in disability, of more than 10 instead of 49 days, compensation shall run from date of disability; making compensation for total permanent disability, temporary total and permanent partial, 75 per cent of average weekly wages, instead of 66⅔; making 80 per cent loss of vision total loss of vision; and increasing from $15 to $30 per week the maximum compensation for loss of hand, foot, arm, leg or eye, and from $5 to $10 a week the minimum compensation. By Mr. Fertig. (Same as S. 254.) To Judiciary Committee. Printed No. A. 46. Int. 46.

Constituting chapter 71, Consolidated Laws, to be known as the Health Insurance Law, establishing a system of health insurance for industrial workers and dependents to cover cases of sickness, accident or disability or death resulting therefrom except cases coming under the Workmen's Compensation Law or in which liability for damages or other benefits is imposed by act of Congress. Federal, state and municipal employees for whom provision is made through legally authorized means are excepted. Minimum benefits include medical, surgical and nursing attendance and treatment for employee and dependents, hospital treatment and maintenance, dental service, cash sickness benefits for himself and dependents, and cash maternity and funeral benefits. The Industrial Commission is to administer the act. The cost of the insurance is to be borne one-half by the employer and one-half by the employee, with certain exceptions. There are many other provisions. (Same as S. 73.) By Mr. Donohue. To Ways and Means Committee. Printed No. A. 90. Int. 90.

Amending sections 41, 42, 45, 49, 49-a, 51, 51-a, Labor Law, by establishing a bureau of health insurance in the Labor Department in charge of a fourth deputy commissioner, at $6,000 a year, to administer the Health Insurance Law. (Same as S. 131.) By Mr. Donohue. To Ways and Means Committee. Printed No. A. 93. Int. 93.

Amending section 2, County Law, by providing that amendments to section 45 made by chapter 268 of Laws of 1918, shall not apply to counties in which a site for a tuberculosis hospital has been selected by any county and was approved prior to April 19, 1918, by the State Health Commissioner or his designated deputy and the local health commissioner under section 319, Public Health Law. (Same as S. 127.) By Mr. Tallett. To Internal Affairs Committee. Printed No. A. 183. Int. 181.

Constituting chapter 71, Consolidated Laws, to be known as the Health Insurance Law, establishing a system of health insurance for industrial workers and dependents to cover cases of sickness, accident or disability or death resulting therefrom except cases coming under the Workmen's Compensation Law or in which liability for damages or other benefits is imposed by act of Congress. Federal, State and municipal employees for whom provision is made through legally authorized means are excepted. Minimum benefits include medical, surgical and nursing attendance and treatment for employees and dependents, hospital treatment and maintenance, dental service, cash sickness for himself and dependents, and cash maternity and funeral benefits. The Industrial Commission is to administer the act. The cost of the insurance is to be borne one-half by the employer and one-half by the employee, with certain exceptions. There are many other provisions. (Same as S. Int. 73 of 1919 except that it contains an additional section providing for additional benefits.) By Mr. Steinberg. To Insurance Committee. Printed No. A. 213. Int. 210

Amending section 443, Public Health Law, by making it a felony to sell, offer for sale or give away habit-forming drugs to any child under 16 years or to commit a second violation of the provision against the sale of such drugs. At present violation is a misdemeanor. By Mr. Evans. To Public Health Committee. Printed No. A. 296. Int. 292

District Branch Meetings

SIXTH DISTRICT BRANCH

ANNUAL MEETING, CORNING

TUESDAY, OCTOBER 1, 1918.

Owing to the late arrival of the president, Dr. Higgins, the meeting was called to order by the vice-president, Dr. Quirk. Forty-three members were present.

A motion was made by Frank S. Swain, M.D., of Corning, and carried, that the chair appoint a committee to draft suitable resolutions upon the death of Charles H. Gallagher, M.D., of Ithaca, and Leon S. Betowski, M.D., of Waverly, both of whom died in the service of their country. Drs. Frank S. Swain, Corning, John S. Kirkendall, Ithaca and M. L. Bennett, Watkins, were appointed and presented the following resolutions, which were adopted by the society:

Whereas, Drs. Charles H. Gallagher and Leon S. Betowski, while serving their country in France, have given their lives in relieving the sufferings of our injured men; Dr. Gallagher dying of pneumonia, and Dr. Betowski while acting as a volunteer to carry masks to the front line, and

Whereas, In the death of these two men the society has lost not only two valuable members but also its secretary; men who with a bright future before them made the supreme sacrifice in their efforts to make the world a fit place in which to live, which fact should be most consoling to their relatives as it is to this society; be it

Resolved, That while we mourn their loss there is a feeling of pride that the end came while performing such heroic and unselfish duties to mankind.

(Signed) FRANK S. SWAIN
JOHN S. KIRKENDALL
M. L. BENNETT

Moved, seconded and carried, that the regular order of business be dispensed with and that the society proceed to the following scientific session.

"Focal Infection in Relation to Diseases of the Eye," by John S. Kirkendall, M.D., Ithaca.

The paper on "Oral Infection in Relation to Systemic Disease," by C. Stuart Roth, D.D.S., Syracuse, was, owing to the illness of Dr. Roth, read by R. Paul Higgins, M.D.

"Diseases of the Tonsils and Adenoids," by R. Paul Higgins, M.D., Cortland.

Discussions by Drs. Marcus A. Dumond, Ithaca; James E. Walker, Hornell; Charles A. Carr, Corning; John S. Kirkendall, Ithaca.

Lunch at the Hotel Dickinson.

At the afternoon session Willis S. Cobb, M.D., of Corning, was elected secretary for the ensuing year.

The following papers were read and discussed:

"Physicians and Army Service," by Captain Edward J. Wynkoop, M.R.C., Syracuse.

"Pre-operative and Post-operative Care of Abdominal Cases," by Donald Guthrie, M.D., Sayre, Pa.

Paper by Frank S. Swain, M.D., Corning.

Discussion by Drs. Harvey P. Jack, Hornell; John S. Kirkendall, Ithaca; Frank DeW. Reese, Cortland, and Frank S. Swain, Corning.

"Acute Pus Tubes and Tubal Pregnancy, Their Differential Diagnosis," by Harvey P. Jack, M.D., Hornell.

Discussion by Drs. Frank DeW. Reese, Cortland; John M. Quirk, Watkins; Howard S. Brasted, Hornell, and Harvey P. Jack, Hornell.

"Practical Points on Infant Feeding," by Frank DeW. Reese, M.D., Cortland.

Discussion by Drs. Marcus A. Dumond, Ithaca, and Otto K. Stewart, Canisteo.

"The Planning and Organization of a Maternity Hospital," by Stuart B. Blakely, M.D., Binghamton.

A vote of thanks was offered to the doctors of Steuben County for their interest and hospitality.

County Societies

DUTCHESS-PUTNAM MEDICAL SOCIETY.

ANNUAL MEETING, POUGHKEEPSIE.

WEDNESDAY, JANUARY 8, 1919.

The meeting was called to order at 4.25 P. M. in the Library Rooms, by the president, John A. Card, M.D. Sixteen members were present.

The minutes of the previous meeting were read and accepted. The secretary read the following report:

Membership December 31, 1918	116
Gains for year by transfer, Dr. H. R. Dunton	1
Losses for year by death, Dr. Richard Giles	1
Members automatically dropped for non-payment of dues	16
Number of the above in the service	10
Members in good standing, Jan. 1, 1919	100
Number of regular meetings	3
Number of special meetings	2

HOWARD P. CARPENTER, Secretary.

Moved, seconded and carried that the report be accepted.

The treasurer read the following report:

Balance from 1917	$354.45
Dues, 1918	499.00
Expenses, 1918	804.97
Balance in treasury	48.48

Moved, seconded and carried that the report be accepted.

Alva L. Peckham, M.D., gave an informal report of the milk committee. Moved, seconded and carried that the report be accepted.

The following officers were elected for the ensuing year: President, John S. Wilson, M.D., Poughkeepsie; vice-president, John C. Slawson, M.D., Mahopac; secretary, Howard P. Carpenter, M.D., Poughkeepsie; associate secretary, Aaron Sobel, M.D., Poughkeepsie; treasurer, Lewis H. Marks, M.D., Poughkeepsie; censors: Alva L. Peckham, M.D.; Coryell Clark, M.D., and Marcus M. Lown, M.D.; delegates to State Society for 1919-1920: John A. Card, M.D., and Robert A. Andrews, M.D.; counsel, George V. L. Spratt.

The president spoke with feeling of the death of Dr. Sidney C. Vermilyea and read the following telegram sent in the name of the society to Mrs. Vermilyea:

"Mrs. Sidney C. Vermilyea: When Dr. Vermilyea offered his services to this government in the terrible conflict that we were engaged in, he won the admiration of all the members of the profession for his patriotism. Now the message comes that he has made the supreme sacrifice. Words cannot adequately express the feelings that come over us at such times. In behalf of the Dutchess-Putnam Medical Society, I can only express to you our sincere regrets and deepest sympathy at this time for your bereavement. The medical profession has lost a loyal brother, the Medical Society a good member, and you a devoted husband."

The following committee was appointed to draft suitable resolutions on Dr. Vermilyea's death: Drs. W. G. Ryon, W. E. Merriman and J. E. Sadlier.

The following resolution was passed:

That the Dutchess-Putnam Medical Society pay the State per capita assessments for 1918 of members in military service, and as long as they are in active service, and that the treasurer of this society remit the county assessment.

Dr. Peckham moved that an assessment of at least fifty (50) cents be made on members present for luncheon at our meetings in order to relieve the strain on the depleted treasury. Carried.

The scientific program consisted of an informal discussion of the recent influenza epidemic by Drs. Becker, J. A. Card, A. L. Peckham, and J. E. Sadlier.

MEDICAL SOCIETY OF THE COUNTY OF ERIE.

Annual Meeting, Buffalo.

Monday, December 16, 1918.

The ninety-eighth annual meeting of the society was held at the Buffalo Medical College, George F. Cott, M.D., president, presiding.

Dr. Cott called the meeting to order at 8 o'clock and appointed James B. Croff, M.D., and Isaac Sernoffsky, M.D., tellers for the election of officers.

Owing to the impossibility of holding the regular October meeting because of the influenza epidemic, no nominations were previously made, and for that reason nominations were made at the annual meeting.

The following officers were elected for the ensuing year: President: James E. King, M.D.; first vice-president, Earl P. Lothrop, M.D.; second vice-president, Arthur G. Bennett, M.D.; secretary, Franklin C. Gram, M.D.; treasurer, Albert T. Lytle, M.D.; censors: John D. Bonnar, M.D.; Archibald D. Carpenter, M.D.; Arthur G. Bennett, M.D.; Frank A. Valente, M.D.; Francis E. Fronczak, M.D.; delegates to the State Society: F. Park Lewis, M.D.; Grover, W. Wende, M.D.; Harry R. Trick, M.D.; Charles G. Stockton, M.D.; Archibald D. Carpenter, M.D. The following chairmen were appointed: on legislation, H. W. Cowper, M.D.; on public health, F. Park Lewis, M.D.; on membership, William F. Jacobs, M.D.; on economics, John V. Woodruff, M.D.

Albert T. Lytle, M.D., read his report as treasurer of the society, which was incomplete inasmuch as the report did not close until December 31. However, it gave the society a synopsis of what the complete report would be. According to this report the society had 687 members, which number might change before the end of the year as some of those in arrears would pay before that time.

John D. Bonnar, M.D., chairman of the board of censors, presented the annual report of the board, which showed the many decided activities of the censors during the year. The report was received and filed and a vote of thanks rendered to the board, and especially to Chairman Bonnar.

F. Park Lewis, M.D., recommended that the chairman of the board of censors go to the newspapers and ask them not to publish quack advertisements.

John V. Woodruff, M.D., made the report of the committee on economics, which was accepted.

William F. Jacobs, M.D., chairman of the committee on membership, recommended the names of Dean O. Thompson, M.D., and Kate Pelham, for membership. On motion the secretary was directed to cast a ballot for their election.

F. Park Lewis, M.D., moved that the next meeting of the society be devoted to the question of professional and medical economics and that the society recommend to the council that they formulate a program accordingly. This motion was adopted.

Arthur G. Bennett, M.D., moved that the usual honorarium be given to the secretary, treasurer and to the chairman of the board of censors, and that the attorney be given the amount agreed upon between the board the President and the attorney. Motion was carried.

Dr. Cott then called Dr. Wende to the chair and read his annual address.

The following resolutions from the Buffalo Academy of Medicine were read:

"Never before has the Health Department of the city of Buffalo been called upon to protect its citizens from so virulent an epidemic of unknown cause as the recent epidemic of so-called influenza.

"The alarming spread and the rapid approach of the epidemic was appreciated by the acting health commissioner, Dr. Franklin C. Gram, in its earliest attack upon our city, and with the appearance of the first few cases he began to strenuously fight it.

"There was no known preventive. Little or no knowledge of its management could be gained from the experience of other cities which had become infected.

"Though handling a new problem, Dr. Gram attacked it from as many angles as possible in order to control it, and thereby prevent the disastrous results which followed in its wake in many cities.

"Because of his untiring, conscientious efforts, and because of his courage to do bold things, Dr. Gram was able to limit the spread of the disease to 5 per cent. of our population, which is a wonderful achievement when compared to other cities where 20 per cent., even 40 per cent. of their population were infected..

"Consequently we, the fellows of the Buffalo Academy of Medicine, wish to express to the acting health commissioner, Dr. Franklin C. Gram, our appreciation of his labors and to congratulate him upon his success."

On motion of Dr. Woodruff the resolutions of the Buffalo Academy of Medicine were also unanimously adopted and President Cott was requested to have them printed in the public press together with this annual address.

MEDICAL SOCIETY OF THE COUNTY OF CHENANGO.

Annual Meeting, Norwich.

Tuesday, December 10, 1918.

The meeting was held at Guernsey Memorial Library. The following officers were elected for the ensuing year: President, George DeB. Johnson, M.D., Oxford; vice-president, Homer E. Smith, M.D., Norwich; secretary and treasurer, John H. Stewart, M.D., Norwich.

The scientific session consisted of the following symposium on influenza:

"Symptomatology and Diagnosis," Anna White-Marquis, M.D., Norwich.

"Prophylaxis and Treatment," George DeB. Johnson, M.D., Oxford.

"Complications," John H. Stewart, M.D., Norwich.

MEDICAL SOCIETY OF THE COUNTY OF BROOME.

Regular Meeting, Binghamton.

Tuesday, January 7, 1919.

The following officers were elected for the ensuing year: President, George S. Lape, M.D., Binghamton; vice-president, William H. Hobbs, M.D., Binghamton; secretary, Henry DeW. Watson, M.D., Binghamton; treasurer, Charles S. Wilson, M.D., Johnson City; delegates to State Society, Charles S. Wilson, M.D., Johnson City, and Sanford H. Kinne, M.D., Binghamton; alternates, Frank C. McLean, M.D., Chenango Forks, and Lester H. Quackenbush, M.D., Binghamton.

Resolved, That a committee of several members from the Broome County Medical Society be appointed to confer with Commissioner Phillips on one of his visits to Binghamton and discuss in a friendly way some of the matters concerning the public health law.

Resolved, That a committee from the Broome County Medical Society be appointed to recommend to the Senator and Assemblyman of the district to rescind the act passed in May, 1918, tending to regulate the use of narcotics.

MEDICAL SOCIETY OF THE COUNTY OF ROCKLAND.

Annual Meeting, Spring Valley.

Wednesday, December 4, 1918.

The following officers were elected for the ensuing year: President, Giacomo A. Senigaglia, M.D., Nyack; vice-president, M. J. Sullivan, M.D., Haverstraw; secretary, S. W. S. Toms, M.D., Nyack; treasurer, Dean Miltimore, M.D., Nyack; delegate to State Society, Merton J. Sanford, M.D., Suffern; alternate, George A. Leitner, M.D., Piermont.

MEDICAL SOCIETY OF THE COUNTY OF CAYUGA.

Annual Meeting, Auburn.

Friday, December 27, 1918.

The following officers were elected for the ensuing year: President, Harry E. Anthony, M.D., Moravia; vice-president, William E. Walsh, M.D., Auburn; secretary, Lillian A. Treat, M.D., Auburn; treasurer, Frederick A. Lewis, M.D., Auburn; delegate to State Society, M. P. Conway, M.D., Auburn; alternates, Ledra Heazlit, M.D., Frederick A. Lewis, M.D., and Louis F. O'Neill, M.D., Auburn; censors: Oscar B. Swayze, M.D., chairman; Edmund J. Eldridge, M.D., Howard D. Chapman, M.D., William A. Strohmenger, M.D., and Charles L. Lang, M.D.

Action was taken by the society regarding payment of State Society dues of members in the United States Army service, and the treasurer was directed to keep such members in good standing with the State Society.

After an address by the retiring president, Emerson W. Hitchcock, M.D., a buffet luncheon was served and the meeting adjourned.

MEDICAL SOCIETY OF THE COUNTY OF FRANKLIN.

Annual Meeting, Malone.

Tuesday, December 10, 1918.

The seventy-second annual meeting of the society was called to order in the Elks Club at 11 o'clock by the president, William N. Macartney, M.D. The following members were present: Drs. William N. Macartney, George M. Abbott, Aloney L. Rust, John A. Grant, Watson H. Harwood, Sidney F. Blanchet, John D. Harrigan, Henry J. Blankemeyer, Jr., Alfred G. Wilding and John E. White.

Visitors present were: Drs. W. Lauterman, R. H. Craig and F. A. L. Lockhart, all of Montreal.

The minutes of the last meeting were read and approved.

Reports of the comitia minora were read and approved.

The following officers were elected for the ensuing year: President, John A. Grant, M.D., Malone; vice-president, Sidney F. Blanchet, M.D., Saranac Lake; secretary and treasurer, George M. Abbott, M.D., Saranac Lake; censor, John E. White, M.D., Malone.

The amendment offered at the last annual meeting, to change the date of the annual meeting from the second Tuesday in December to the second Tuesday in November of each year, was unanimously passed.

The secretary and treasurer read their respective reports, which were accepted as read.

By vote of the society the treasurer was instructed to sell the Liberty Loan bond, if at any time it was necessary to defray the expenses of the society.

The president-elect appointed the following committees: Public health, Alfred G. Wilding, M.D., Charles C. Trembley, M.D., and John S. Van Vechten, M.D.; Legislation, Percival F. Dalphin, M. D., Flurence W. McCarthy, M.D., and Hugh McL. Kinghorn, MD.

The meeting adjourned at 1 o'clock for lunch, and through the hospitality of the president, members and invited guests were sumptuously entertained at the Elks Club.

The scientific session was opened with the president's annual address, which was confined more especially to the recent influenza epidemic, after which the following papers were read and discussed:

"Inflammation of the Uterine Appendages," F. A. L. Lockhart, M.D., of Montreal.

"Esophagoscopy," Robert H. Craig, M.D., of Montreal.

"The Incidence of Syphilis in Diseases of the Chest with Special Reference to Its Differential Diagnosis from Tuberculosis," M. Lauterman, M.D., of Montreal. Dr. Lauterman showed several very interesting specimens to illustrate his paper.

MEDICAL SOCIETY OF THE COUNTY OF RICHMOND.

Annual Meeting, New Brighton.

Wednesday, December 11, 1918.

The following officers were elected for the ensuing year: President, John D. Lucey, M.D., Stapleton; secretary, John S. Ware, M.D., Stapleton; treasurer, Edward D. Wisely, M.D., Port Richmond; delegates, E. Warren Presley, M.D., Great Kills, and George Mord, M.D., Rosebank; alternates, Charles R. Kingsley, M.D., West New Brighton, and John S. Ware, M.D., Stapleton; censors, William Bryan, M.D., and Charles R. Kingsley, M.D., West New Brighton, and E. Warren Presley, M.D., Great Kills.

Regular Meeting, New Brighton.

Wednesday, January 8, 1919.

The meeting was called to order at 9 P. M. by the president, John D. Lucey, M.D.

The minutes of the December meeting were read and approved.

Major Edward S. Rimer, U. S. A., of Camp Merritt, N. J., read a paper on "Influenza," which was followed by general discussion.

A vote of thanks was tendered Major Rimer for his excellent paper. The meeting then adjourned to the Staten Island Club, where a collation was served.

MEDICAL SOCIETY OF THE COUNTY OF TIOGA.

Annual Meeting, Owego.

Tuesday, December 10, 1918.

The following officers were elected for the ensuing year: President, Ralph D. Eastman, M.D., Berkshire; vice-president, LeRoy J. Osborne, M.D., Nichols, treasurer, James M. Barrett, M.D., Owego; secretary, Eugene E. Bauer, M.D., Owego; censors: Thomas C. Washburn, M.D., Spencer; Eugene D. Holly, M.D., Candor; Guy S. Carpenter, M.D., Waverly; delegate to State Society, George M. Cady, M.D., Nichols.

TOMPKINS COUNTY MEDICAL SOCIETY.

Annual Meeting, Ithaca.

Tuesday, December 10, 1918.

The following officers were elected for the ensuing year: President, Willets Wilson, M.D., Ithaca; vice-president, Carl F. Denman, M.D., Ithaca; secretary, Wilbur G. Fish, M.D., Ithaca; treasurer, J. Wesley Judd., M.D., Ithaca; censors: Helen D. Bull, M.D., Ithaca; Arthur D. White, M.D., Ithaca; Michael J. Foran, M.D., Ithaca; Homer Genung, M.D., Freeville; Robert H. Fisher, M.D., Ithaca.

THE MEDICAL SOCIETY OF THE COUNTY OF SENECA.

Annual Meeting, Seneca Falls.

Thursday, December 26, 1918.

The following officers were elected for the ensuing year: President, Charles T. Ostrander, M.D., Waterloo; vice-president, Thomas F. Cole, M.D., Romulus; secretary and treasurer, Robert Knight, M.D., Seneca Falls; delegate to State Society, Robert M. Elliott, M.D., Willard; alternate, C. Anna J. Brown, M.D., Seneca Falls.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

PRINCIPLES AND PRACTICE OF OBSTETRICS. By JOSEPH B. DELEE, A.M., M.D., Professor Obstetrics Northwestern University Medical School. Third edition, thoroughly revised. Large octavo, 1,089 pages, 949 illustrations, 187 in colors. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, $8.50 net.

A MANUAL OF DISEASES OF THE NOSE, THROAT AND EAR. By E. B. GLEASON, M.D., Professor Otology Medico-Chirurgical College Graduate School, University Penn. Fourth edition, thoroughly revised. 12mo., 616 pages, 212 illustrations. Philadelphia and London: W. B. Saunders Co., 1918. Cloth, $3 net.

A TEXT-BOOK OF PHYSIOLOGY: FOR MEDICAL STUDENTS AND PHYSICIANS. By WILLIAM H. HOWELL, Ph.D., M.D., Professor Physiology, Johns Hopkins University, Baltimore. Seventh edition, thoroughly revised. Octavo, 1,059 pages, 307 illustrations. Philadelphia and London: W. B. Saunders Co., 1918. Cloth, $5 net.

PATHOLOGICAL TECHNIQUE. A Practical Manual for Workers in Pathologic Histology and Bacteriology, Including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By F. B. MALLORY, M.D., Associate Professor Pathology, Harvard Medical School, and J. B. Wright, M.D., Pathologist, Massachusetts General Hospital. Seventh edition, revised and enlarged. Octavo, 555 pages, 181 illustrations. Philadelphia and London: W. B. Saunders Co., 1918. Cloth, $3.75.

A MANUAL OF GYNECOLOGY. By JOHN COOKE HIRST, M.D., Associate Gynecology, University of Pennsylvania; Obstetrican and Gynecologist to the Philadelphia General Hospital. 12mo. of 466 pages, with 175 illustrations. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, $2.50 net.

NEOPLASTIC DISEASES. A Text-book on Tumors. By JAMES EWING, M.D., Sc.D., Professor of Pathology at Cornell University Medical College, New York City. Octavo of 1,027 pages with 479 illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Cloth, $10 net.

THE MEDICAL CLINICS OF NORTH AMERICA. Volume 2. U. S. Army number. No. 2. September, 1918. Published bi-monthly by W. B. Saunders Company, Philadelphia and London.

THE SURGICAL CLINICS OF CHICAGO. December, 1918. Volume 2. No. 6. Index number. Published bimonthly by W. B. Saunders Company, Philadelphia and London.

THE HEARTS OF MAN. By R. M. WILSON, M.D., Late Assistant to Sir James Mackenzie, under the Medical Research Committee. Published by Henry Frowde, Hodder & Stoughton, Oxford University Press, Warwick Square, E. C., 1918.

SERVICE DE SANTE MILITAIRE, CENTRE D'ETUDES. Et D'enseignement Medico-Chirurgical De Bouleuse. Lecons De Chirurgie De Guerre. Publiees sous la direction de Cl. Regaud, Professeur a l'Institut Pasteur, Directeur du Centre d'Etudes et d'enseignement de Bouleuse. Par MM. Guillain, Jeanbrau, Lecene, Lemaitre, Leriche, Magitot, Mocquot, Nogier, Okinczyc, Piollet, Policard, Roux-Berger, Tissier. Masson et Cie, Editeurs, Libraries De L'Academie De Medicine 120, Boulevard Saint-Germain, Paris, VI. 1918.

PERSONAL HYGIENE AND HOME NURSING. A Practical Text for Girls and Women for Home and School Use. By LOUISA C. LIPPITT, R. N., Assistant Professor of Correction Exercises, University of Wisconsin. (In New-World Science Series, edited by Professor John W. Ritchie.) Illustrated. Cloth, vii+256 pages. Price, $1.28. Published by World Book Company, Yonkers, New York.

A TEXT-BOOK OF GENERAL BACTERIOLOGY. By EDWIN O. JORDAN, Ph.D., Professor Bacteriology University of Chicago and the Rush Medical College. Sixth edition, thoroughly revised. Octavo, 691 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, $3.75 net.

AN INTRODUCTION TO NEUROLOGY. By C. JUDSON HERRICK, Ph.D., Professor of Neurology in the University of Chicago. Second edition, reset. 12mo. of 394 pages, 140 illustrations. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, $2 net.

Book Reviews

WAR SURGERY OF THE ABDOMEN. By CUTHBERT WALLACE, C.M.G., F.R.C.S., England, M.B., B.S., London. 152 pages, with 26 illustrations. Philadelphia: P. Blakiston's Son & Co., 1918. 8vo. Cloth, $3.

"This book contains the experiences in abdominal surgery of a sector of the battle line over a period of thirty months." The text covers every kind of internal abdominal injury. Symptoms, diagnosis and treatment are discussed and analyzed with considerable detail. Chapter IV on "Diagnosis and Treatment of Intraperitoneal Damage" deserves special mention.

From cover to cover the book is filled with sane, conservative surgery. The commendable features of most of the surgical works published by British writers are their clearness and conservatism.

HARRY R. TARBOX.

THE TREATMENT OF SYPHILIS. A Critical Review by L. W. HARRISON, D.S.O., M.B., Ch.B., Lt. Col., R.A.M.C., Lecturer in Venereal Diseases and Officer-in-Charge Military Hospital, Rochester Row. Oxford University Press, 35 West 32d Street, New York City. Also London, Eng. Price, $1.

This reprint of 74 pages from the "Quarterly Journal of Medicine" is a critical review of the modern treatment of syphilis by the arsenical compounds.

The article is divided into three parts. The first discusses the remedies used in the treatment of syphilis. The second deals with the general management of syphilis, and the third is nearly four pages of references. The third division is well worth the price of the book.

J. M. W.

ANATOMY OF THE HUMAN BODY. By HENRY GRAY, F.R.S. Twentieth edition, thoroughly revised and reedited by WARREN H. LEWIS, B.S., M.D. 1,396 pages, 1,247 engravings. 8vo. Philadelphia and New York: Lea & Febiger, 1918. Cloth, $7.50; leather, $9.

A work that has gone through twenty editions in sixty years and is still the standard textbook on anatomy, does not need an extended review; it is sufficient to note the changes made in the present edition.

Special sections of embryology have been distributed among the subjects under which they belong. New matter on physiologic anatomy has been added.

The sections on ductless glands and the nervous system are practically new, for they have been rewritten and brought up to date.

The anatomy of the sympathetic nervous system is presented in a much more easily understood manner by means of diagrams.

Many new illustrations have been added, some of them have given a distinctive value to the book, especially the illustrations of the nervous system. The addition of color to some of the older illustrations does not seem to be a marked improvement.

The book has changed so much for the better during the last sixty years that one scarcely recognizes his old friend and first medical textbook.

VACCINES AND SERA. Their Clinical Value in Military and Civilian Practice. By A. GEOFFREY SHERA, B.A., M.D., B.C., Honorary Captain R.A.M.C., Clinical Pathologist British Red Cross Hospital, Netley. With an Introduction by Sir CLIFFORD ALLBUTT, K.C.B., M.D., F.R.S., Regius Professor Physic, University Cambridge. Henry Frowde and Hodder & Stoughton. London, 1918. Oxford University Press, 35 West 32d Street, New York. Price, $2.50.

This is a small book about which a great deal could be said. Military surgeons have had a rich experience in treating infected wounds and Captain Shera herein shows the valuable aid rendered by vaccines and sera in a great variety of cases, including infected chest wounds, sinus, eye and skin infections. Owing to commercial exploitation and indiscriminate use by physicians having little knowledge of immunity, vaccines and sera have fallen into an ill-deserved disrepute. Captain Shera's book comes at a psychological moment and deserves a careful reading, for it presents a very clear, readable and sane argument based on a rich and diverse experience in several English military hospitals.

Briefly, the facts are as follows: As our knowledge increases we find an increasing number of sub-varieties of bacteria, each highly specific and responding only to a specific vaccine or serum aimed against that particular strain. Hence the futility of stock vaccines. Each organism has a definite mode of attack and to successfully combat a given infection one must know the details of this modus operandi and use the agent indicated, discriminating carefully between vaccine and serum or a use of both. Lastly, the response of the body cells to vaccine stimulation is slow and cannot be hurried unduly. The author recommends small, infrequent doses and believes harm may be done by large, frequent doses. Failures should be charged to the user, not the agent. Insufficient knowledge, disregard of the laws of immunity, improper dosage or the use of a vaccine made from the wrong organism or strain—these are the causes of many failures.

E. B. SMITH.

THE SURGICAL CLINICS OF CHICAGO. Volume 2, No. 4. August, 1918. Philadelphia and London: W. B. Saunders Company. Published bi-monthly. Price per year: Paper, $10; cloth, $14.

This number contains numerous case reports of especial interest, and the observations and conclusions of men whose experience counts.

The technique of operation for pituitary tumor as performed by Dr. Lewis L. McArthur with approach through the frontal prominence and supraorbital region, appeals to the general surgeon because of its direct approach and its aseptic environment, as in contrast to the nasal route. The same appeal holds true in regard to the chapter by Dr. Kellogg Speed describing the technique of transarticular capsulorrhaphy for the removal of a bullet from the knee, as done at a French base hospital.

Dr. A. D. Bevan's report of skin grafting for burns of the chest makes one wonder why a man who is so much of a leader in what is new in surgery should cling to the old cumbersome ways, instead of the simplified methods now so generally used.

The chapter on the "Acute Abdomen," by Dr. Daniel N. Eisendrath is complete and scholarly and worthy of close attention.

Some of the conclusions to be drawn from the reports of fracture cases by Dr. William Hessert are worth emphasizing and should be studied and digested by the open-operation enthusiast. The evils as well as the dangers of the open operation for suture or plating need to be made more prominent, as well as the fact that perfect function does not of necessity mean perfect alignment as shown by the fluoroscope.

The chapter "General Discussion of Fractures," by Dr. George D. J. Griffin, serves to emphasize the observations of the preceding author.

Taken as a whole, this number is well worth reading.

DISEASES OF THE HEART AND AORTA. By ARTHUR DOUGLASS HIRSCHFELDER, M.D. With an Introductory note by LEWELLYS F. BARKER, M.D., LL.D. Third edition, revised. J. B. Lippincott Company. Philadelphia and London. 1918. 732 pages. Illustrated. 8vo. Cloth, $7.

No extended review of this well-known work is needed. To those who are familiar with either the first or second edition, the mere statement that a third edition is now offered is sufficient. The principal changes in the present edition are those that have been necessitated by recent studies on the circulation as interpreted by graphic readings by the electrocardiograph, the Frank mirror and similar improvements in instruments of precision for the study of heart conditions. One notices some changes in the arrangement of the book, such as the grouping of the paroxysmal tachycardias with the arrhythmias; the addition of a number of new figures and an extended bibliography; Eggleston's work on digitalis in decomposition has been elaborated, and the use of much larger doses than heretofore as used by several able clinicians is discussed; the thyroid heart has been made the subject of more modern study; the recent work on carbonic acid gas retention and excretion in relation to general metabolism and particularly to dyspnoea has been added; and the effect of pregnancy upon the heart is also considered. These, with the subject of overstrain, especially in the cardiovascular neurasthenic type of young man as brought out by the stress of military services, are indicative of the thoroughness with which the work has been modernized. The convenience for reference that is afforded by the use of different sizes of type to indicate the relative importance of different phases of each subject may be once more gratefully emphasized. The work is at once a convenient manual and a comprehensive reference. HENRY G. WEBSTER.

DISEASES OF THE MALE URETHRA. By IRVIN S. KOLL, M.D., Professor of Genito-Urinary Diseases, Post-Graduate Medical School and Hospital, Chicago, Octavo, 151 pages, 123 illustrations, several in colors. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, $3.00 net.

This book of 150 pages is one of the best on its subject that has come into the reviewer's hands in a long time. The treatment and management of gonorrhoea is still in an empirical stage and the mature experience of every teacher and practitioner is of value. Professor Koll has written a compact, comprehensive discussion of his subject. His style is vigorous and clear. In descriptions of methods of treatment there is a sufficiency of distinct detail with a refreshing absence of inconsequential minituæ.

The advice to make a large incision in bubo, with packing of the wound (page 57), is unwise. This procedure is always followed by a large scar and the length of time of healing is longer than when a small incision is made, with evacuation of pus and immediate injection of 10 per cent iodoform emulsion.

For either the specialist or general practitioner the time spent with this book will be valuable and entertaining. STURDIVANT READ.

THE PROTEOMORPHIC THEORY AND THE NEW MEDICINE, An Introduction to Proteal Therapy, by HENRY SMITH WILLIAMS, B.Sc., M.D., LL.D. Member National Committee for Mental Hygiene; Successively Physician to the Blackwell's Island and Bloomingdale Asylums, and Medical Superintendent of the New York Infant Asylum and the Randall's Island Hospitals, New York City. New York, The Goodhue Company, 1918.

It is impossible within the limits of a brief review to enter into a critical discussion of the theories advanced by Dr. Williams. It will be of interest to note briefly, however, the salient features of his argument. First, a theory of the mechanism by which the body disposes of parenterally introduced proteins, bacterial and otherwise. Second, evidence that certain vegetable proteins and by their by-products prepared by the author have in his hands and those of numerous physicians throughout the country proved valuable in the treatment of bacterial and other protein intoxications.

The proteomorphic theory of immunity is as follows: Whenever bacteria or other proteins gain entrance to the blood stream they are first attacked by the leucocytes which are postulated to possess certain general, non-specific proteolytic enzymes capable of initiating the hydrolysis of proteins and carrying on to the polypeptid stage of digestion. Here the red blood cells come into action with specific enzymes which complete the disintegration of the protein molecule. Infection or protein poisoning results, of course, in cases in which the red blood cells are not equipped with sufficient of the specific enzymes to destroy the poisonous polypeptids. It is an ingenious theory, plausibly presented, but it lacks experimental support and when the author attempts to interpret the phenomena of anaphylaxis in the light of his theory he meets with insuperable difficulties. Neither does he apply to his theory the important work of Jobling, Novy and others on the non-specific production of anaphylaxis nor the fact that the bulk of opinion today inclines to the belief that the poisonous substance in anaphylaxis, however produced, is derived from the serum and not the antigen.

The author's views on his "new medicine" are as follows: The tissues producing immunizing substances do not respond well to the use of familiar animal and vegetable proteins but do respond to unfamiliar vegetable proteins not ordinarily used as foods. The reaction is non-specific in that one or several of his proteins are said to immunize against a great variety of protein intoxications. The results obtained by the author and numerous other physicians are largely a subjective amelioration of symptoms. In fairness, one must state that some cases of malignancy appear to have gone on to cure yet even in these there is lacking proof of diagnosis or the patient has not been cured long enough to be sure he will stay cured or he fails to consider that even malignant growths sometimes regress spontaneously. The author attaches great importance to slight variations in blood counts without consideration of the more important variations in total blood volume. As a pathologist we cannot agree with him when he groups such diverse conditions as leukemias, pernicious anemias, hyper and hypothyroidism, arteriosclerosis and benign and malignant neoplasms under the heading of the "cancerous condition." Nor can we agree that surgery is useless or that it is almost criminal negligence not to supplement surgery with his proteal therapy in the treatment of malignancy. There is much that is instructive and conducive to thought in this book and there is some truth in the theories presented but it is to be regretted that the author has not given us more scientific data or placed his proteals in the hands of those most competent to test its merits.

E. B. SMITH.

THE UNGEARED MIND. By ROBERT HOWLAND CHASE, A.M., M.D., Physician-in-Chief Friends Hospital (for Mental Diseases). Illustrated. Philadelphia: F. A. Davis Company, Publishers. English Depot Stanley Phillips, London, 1918. Price, $2.75.

This book is one, treating in an essentially non-technical manner, of the various phases of transient or more permanent mental upsets. Also the author dwells upon the factors that produce and have a bearing upon mental states.

The work is gotten up in a popular and readable style, free from scientific phraseology. The chapters are not arranged in text book style, but rather suggest that the book is compiled from a series of lectures given by one who has had a large and extensive experience.

The book is well gotten up and will readily find a place in circulation.

E. M. SOMERS.

INTERNATIONAL CLINICS. Volume 2, 28th series, 1918. Phila. and London, J. B. Lippincott Company. Cloth, $2.00.

This volume contains nineteen articles divided into seven sections, namely, Clinics, Medicine, Public Health, Obstetrics and Gynecology, Ophthalmology, Surgery and History.

The clinics include those by James W. Markoe at the New York Lying-in Hospital, by Dean Lewis at the Presbyterian Hospital of Chicago, by J. B. Blake at the Boston City Hospital, and Charles J. White at the Massachusetts General Hospital, and by E. V. L. Brown at the Cook County Hospital, Chicago.

Theses by clinicians outside the United States are one on Pancreatitis by E. W. Archibald of Montreal, Canada, one on Enchondrosarcoma of the pelvic cavity in pregnancy, by E. Vaille of Engelfontaine, France; a third on Tuberculosis of the vulva by Clement Combeleran of Toulouse, and finally one on Primary tuberculosis of the conjunctiva by Gaston E. Ayraud of the French Maritime Health Department. This publication is so well known and established that it is only necessary to state that the present issue is quite up to the standard of the preceding ones.

W. H. DONNELLY.

CHEMISTRY OF FOOD AND NUTRITION. By HENRY C. SHERMAN, Ph.D., Professor in Columbia University. Second Edition, Revised and Rewritten. Enlarged. New York: Macmillan Co., 1918. $2.00.

This new edition of Professor Sherman's excellent work is a great improvement on the first, and is more than its title would indicate. After discussing the constituents of foods and their chemistry, the principal features of digestion and of the digestive enzymes are considered. This is followed by a discussion of the fate of the foodstuffs in metabolism as far as this is known. The fuel value of foods, the energy requirement of the body, the chemistry of metabolism, the protein requirement, the influence of work and various other conditions on metabolism are fully discussed. A valuable feature is a very full discussion of the rôle of the inorganic food constituents, such as common salt, sulphur, phosphorus, sodium, potassium, calcium, magnesium, iron, etc. The function of these inorganic substances in nutrition has, until recently, received scant attention in books on dietetics. In recent years, however, we have come to look upon them as quite as essential as carbohydrates, fats, or proteins. The author gives tables of foods arranged with reference to their content of the various inorganic constituents, and gives the mineral requirements of the body. He also gives due prominence to the maintenance of alkalinity of the body, a matter of great importance and one so often overlooked in dietetic discussions in its relation to scurvy and acidemia. The antiscorbutic, antineuritic properties of foods, and their relation to growth, and the deficiency diseases are considered at length. In these chapters the recent results of feeding experiments on the value of the various foods in nutrition of the lower animals has been incorporated.

The closing chapter of the book is devoted to the consideration of Dietary Standards and the Economic Use of Foods. The relation of the nutritive value and cost of the different foods is illustrated by numerous tables accompanied with suitable comments. Each chapter is followed by a series of references to original papers, which is of great value to those who wish to follow up the subject further.

The appendix contains three very complete tables of the composition of our ordianry foods, and this is followed by a twenty page index. The reviewer knows of no book in the English language which gives more well digested information on foods than this one.

E. H. B.

The American Hospital of the Twentieth Century. A treatise of the development of medical institutions, both in Europe and America, since the beginning of the present century. By Edward F. Stevens, Architect, Member of American Institute of Architects, Member of Province of Quebec Association of Architects, Member of American Hospital Association. 274 pages. Illustrated. Octavo. Architectural Record Publishing Company, New York, 1918. $5.

To cover the subject of hospital construction and equipment over so large a field as Europe and America is a task of such magnitude that it would appear impossible to do so in a volume of 275 pages. The author has, however, succeeded in covering a very considerable part of the subject and has produced a work which is well worthy of careful perusal by hospital workers as well as those interested in the erection and outfitting of new hospitals.

Descriptions of buildings and equipment are concise and very briefly cover the needs of hospitals existing under widely different conditions of climate, finance and surroundings. Floor plans and illustrations are numerous and cover many different types of construction.

The chapter on the Surgical or Operating Unit is interesting in comparing American with European operating units, as demonstrated in several well-known institutions.

The growing need for greater space and more varied equipment in the medical department of up-to-date hospitals is a timely topic and in line with growing needs, as more elaborate methods of diagnosis and treatment are being rapidly developed.

An attractive book, well written by an author who has tried to cover too much in so small a volume.

Richard E. Shaw.

Johnson's Standard First Aid Manual. Suggestions for Prompt Aid to the Injured in Accidents and Emergencies. Edited by Fred. B. Kilmer, in Collaboration with Eminent Surgeons, First Aid Authorities and Specialists. Eighth edition, revised. Illustrated. Published by Johnson & Johnson, New Brunswick, N. J., 1918. Paper, 25 cents; cloth, 50 cents.

This is the eighth edition of this well-known work on first aid. It has been thoroughly revised and brought up to date.

The absence of technical terms and the simplicity of methods outlined make it an extremely valuable work for the laity, or for any one who might be called upon to render first aid.

Physicians have always found the work valuable and the eighth edition will increase their regard for it.

A copy of the work should be in the libraries of the high schools, training schools for nurses and life saving stations.

J. M. W.

The Diseases of Infancy and Childhood. By Henry Koplik, M.D. Fourth edition, revised and enlarged. 928 pages, illustrated with 239 engravings and 25 plates in color and monochrome. Philadelphia and New York: Lea & Febiger, 1918. 8vo. Cloth, $6.00.

Much that is new has been added to this edition of this well-known work in bringing it up to all that is new in the field of Pediatrics. Among the most important revisions are: Acidosis in Infancy; Infant Feeding; Diphtheria; Poliomyelitis; Meningitis; Syphilis; Tuberculosis; Blood Diseases; Heart Disease. New additions are statistics taken from the author's large experience, new plates from actual cases, X-ray plates from the author's hospital service, and pulse tracings. The table of contents shows the following main headings: Infancy and Childhood; Nutrition and Infant Feeding; Diseases of the New Born; Diseases Due to Disturbances of Nutrition; The Specific Infectious Diseases; Diseases of the Mouth, Tongue and Esophagus; Diseases of the Stomach and Intestines; Diseases of the Respiratory System; General Constitutional Diseases; Diseases of the Lymph Nodes, Ductless Glands and Blood; Diseases of the Bones; Diseases of the Ear; Diseases of the Kidneys and Urogenital Tract; Diseases of the Nervous System; Diseases of the Skin.

The definitions of Infancy, Childhood and Newborn are an improvement over the commonly used indefinite divisions. He says: "Infancy or the nursing age, is the period of life during which the child is at the breast. It extends from birth to the twelfth month."

"Childhood is the succeeding period, extending to puberty. It is customary to divide childhood into two periods—the first extending from the end of the first to the sixth or seventh year, or the beginning of the second detention; the second from this time to puberty."

"The period of the newborn should include the first two months of life."

One is rather surprised to find included in this latest edition a chapter devoted to Scrofula, a term which we have outgrown as the author shows by immediately assigning the different causes of the condition. It would have been much better if the term Scrofula had been omitted and the conditions described under separate headings.

In the chapter on infant feeding the adherence to the top milk method is one that most text books nowadays have discarded. It is true that the top milk method of infant feeding will be successful in the majority of patients among the better class, but for the use of the general practitioner and in hospital and institution work it is much better to adhere to the whole milk method of modification.

The high standard of the earlier editions in paper and illustrations and topography is even bettered, an achievement to be wondered at in these days of economy and high prices, and for this and many other reasons it is a book to be highly recommended.

In conclusion it must be said that in so small a volume the author has included many conditions and diseases that are found alone in the encyclopedic works.

Archibald D. Smith.

Clinical Diagnosis. A Manual of Laboratory Methods. By James Campbell Todd, M.D., Professor Pathology, University Colorado. Fourth Edition, revised and reset. 12mo., 687 pages, 232 text-illustrations, 12 colored plates. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, $3.00 net.

The reviewer first made the acquaintance of Dr. Todd's "Clinical Diagnosis" several years ago and has found it to be very useful. The present edition attains the same high standard as previous editions and contains considerable new material such as the new Bass and Johns method for concentration of malarial parasites, fractional gastric analysis, mastic reaction in spinal fluid, selection of donors for transfusion and other new tests.

As a matter of constructive criticism we think future editions would be improved by sections dealing with typing of pneumococci and blood chemistry. However, we can recommend this book as containing in compact form, free from theoretical discussions, a well chosen list of methods for the clinical laboratory including numerous illustrations in color and microphotographs. E. B. Smith.

Medical Contributions to the Study of Evolution. By J. G. Adami, M.D., F.R.S., F.R.C.P. 372 pages. Illustrated. 8vo. New York: The Macmillan Company, 1918. Cloth, $6.

From the title one gains the impression that Dr. Adami's Croonian Lectures before the Royal College of Physicians in London would appeal chiefly to the biologist. But Adami is never academic; his most theoretical discussions have always a practical application. Therefore, these lectures, intended primarily for biologists ought to be read by all physicians. Anything that Adami writes is good, but these lectures are a rare delight. The author has injected into them something of his own personality; he not only empties the vials of his extensive knowledge of pathology but he calls to his aid the facts of geology, physics and chemistry and uses them with the ease of an expert. His style, like that of Vaughan, might well serve as a model for all medical writers. Both men have the happy faculty of writing about the complex facts of immunity in such simple, lucid style as to read like a novel. In addition, Adami makes the story of protein metabolism as fascinating as a Sherlock Holmes story. The reviewer confesses to having stolen hours from more practical duties for an absorbed reading of the tale unfolded by this brilliant writer and pathologist. He shows that the evolutionary theory of adaptation as the direct result of changes in environment has received some of its strongest support from discoveries in bacteriology; that the characteristics of bacteria may be changed at will by changes in environment and the characteristics so acquired are transmitted for generations. He shows that anaphylaxis and immunity are examples of direct adaptation; that drugs and toxins act on the germ cells of man as on the body cells causing modifications apparent in the offspring; that not only defect conditions but acquired special susceptibility and anaphylaxis may be inherited; that the generative system is so closely related to the endocrine that agents effecting the latter may, through internal secretions, effect the former and thus acquired metabolic disturbance in the parent may be transmitted to the offspring. Some of these views will be startling and incredible to those not familiar with the recent literature of immunity and biological chemistry but we would caution those likely to disagree with Dr. Adami. Like Vaughan he never makes a statement which is not backed by gilt-edge experiments and tested by all the powers of a brilliant and logical mind. Lastly, in answer to those who think this an interesting but hardly practical subject, the reviewer holds that the principles of biological chemistry are the very foundation of scientific medicine and some day the physician who does not know and use these principles will be considered uneducated. E. B. Smith.

The Unsound Mind and the Law. A Presentation of Forensic Psychiatry by George W. Jacoby, M.D., author of Child Training as an Exact Science, Consulting Neurologist Hospital Nervous Diseases. Funk & Wagnalls Company: New York, London, 1918. Price $3 net.

This work presents a clear and logical statement of this subject. The medical part of the subject is treated in a masterly manner, giving a clear picture of the modern classification, diagnosis, and relation to abnormal acts. The difficulties of applying medical opinion to the rule of law is clearly shown; but unfortunately it does not afford much hope of improving the situation without altering the Federal Constitution and educating our courts and juries into alienists. The method of improving the situation by having the doctor decide the nature and amount of the mental disturbance and have this fix the degree of responsibility would be a great improvement but it will take generations of hard work to see it accomplished. So long as it is not a question of the existence and not of the degree of responsibility and the question has to be decided by laymen, so long will our present difficulties exist. It is to be observed that the writer does not call attention to the fact that much of the seeming conflict of medical opinion and loss of popular respect in such cases is due not to the medical man but to the existing method of judicial procedure. Arthur C. Brush.

Clinical Medicine for Nurses. By Paul H. Ringer, A.B., M.D. Member of staff Asheville Mission and Biltmore Hospitals. Illustrated. F. A. Davis Co., Philadelphia in 1918.

This is a reproduction in book form of the substance of lectures at the Asheville Mission Hospital, Asheville, N. C.

There are preliminary chapters on fever, food and nutrition and the circulation, and then come thirty chapters on the various medical diseases, and the text is concluded by a short discussion of immunity.

There is appended a glossary of medical terms which is a very important feature, inasmuch as a lecturer on medical subjects to nurses never really knows what terms are understood by his hearers and the same applies to written lectures.

While the etiology, pathology and symptomatology of the various diseases are touched upon, the treatment is gone into more thoroughly, as is proper in a nurses' textbook while medicinal measures are merely mentioned as to be carried out under the attending physician's direction.

While somewhat of an experiment, and apparently the first book of this exact nature published it can undoubtedly be read by a student nurse with interest and benefit. W. H. Donnelly.

Dispensaries, Their Management and Development. A book for Administrators, Public Health Workers, and all interested in Better Medical Service for the People. By Michael M. Davis, Jr., Ph.D., Director Boston Dispensary and Andrew R. Warner, M.D., Superintendent Lakeside Hospital, Cleveland. Illustrated. Published by the Macmillan Company, New York. 1918. Price, $2.25.

Perhaps one of the greatest changes produced by the world war will be the readjustment of medical economics, for many physicians will have been taught to work in organizations and millions of soldiers have been receiving organized medical service, consequently the dispensaries and hospitals will need reorganization to meet the demands of organized effort. How to meet this demand is fully discussed in this timely publication.

The object of the book is best expressed by the following quotation from the preface.

"First to depict the history and extent of Dispensaries in the United States."

"Second; To present the practical details which all people who work in dispensaries, particularly need to know."

"Third: To present the Dispensary as a form of organization not only for rendering efficient medical service to the people, but to benefit the Medical Profession by stabilizing the economic position of the average physician." W.

THE DOCTOR'S PART, WHAT HAPPENS TO THE WOUNDED IN WAR. By JAMES ROBB CHURCH, A.M., M.D., Col. Medical Corps, U.S.A., with foreword by Major-General WILLIAM C. GORGAS, Surgeon-General, U.S.A. Illustrated. Published by D. Appleton & Co., New York and London, 1918. Price, $1.50 net.

This is a very pleasing narrative of the war and its surgical aspects told in a simple and pleasing style by a surgeon who was sent to Europe as a military observer in 1915.

The book is at once a recount of personal experiences and a valuable description of the methods used in the great war to provide the fighting men of the armies with the proper medical, surgical and sanitary attention.

Colonel Church divides the text of his book into chapters on the General Sanitary Service of the French: Hospitals of the Interior; the Zone of the Armies; Transportation; and Front Lines.

It is a noteworthy addition to the medical literature of the war. W. H. DONNELLY.

THE ESSENTIALS OF MATERIA MEDICA AND THERAPEUTICS FOR NURSES. By JOHN FOOTE, M.D., Prof. Therapeutics and Materia Medica, Georgetown University School of Medicine; Third Edition, Revised, Enlarged and Reset. Philadelphia and London, J. B. Lippincott Company, 1918.

Verily, the nurse that masters this book of Dr. Foote's will possess as much therapeutic knowledge as is safely to be entrusted to one not licensed to practice medicine! Of course, the possession of extended knowledge about drugs is not to be objected to in a nurse; but why her very limited time for study should include the pharmacologic action of digitalis, etc., is not clear to this reviewer. Certainly, the book abounds with valuable information for the nurse and should serve as a useful reference work. Where it becomes the text-book in the Training School, the careless prescriber must look to his laurels; or, perhaps, inquire of the nurse regarding the correct latin title of—say Sulphonal. M. F. DELL.

THE SURGICAL CLINICS OF CHICAGO. Volume 2, Number 3 (June, 1918). Octavo of 253 pages, 63 illustrations. Philadelphia and London: W. B. Saunders Company. Published bi-monthly. Price per year, paper, $10.00; cloth, $14.00.

Volume 2, Number 3 of the "Surgical Clinics of Chicago" is full of interesting reading. Considerable space is taken with articles on renal calculi and gall stones. Smithies reports in full his findings in 1,000 cases of gall bladder disease. His tabulations are well worth having.

Articles covering much of the surgical anatomy are to be found: thorax, stomach, duodenum, abdominal tumors, hernia, uterus, feet, nose and throat. HARRY R. TARBOX.

HYGIENE OF THE EYE. By WILLIAM CAMPBELL POSEY, A.B., M.D., Ophthalmic Surgeon Wills and Howard Hospitals; Professor Diseases of the Eye, Philadelphia Polyclinic, University Pennsylvania. 120 illustrations. Published by J. B. Lippincott, Philadelphia and London, 1918. Price, $4.00 net.

The care and health of the eyes and the conservation and prevention of loss and misuse, is the subject dealt with under the above title, by William Campbell Posey, A.B., M.D.

The great value of sight, probably the most valuable of all our special senses, is little appreciated by most of us until, either by personal experience or by close contact, we come in touch with the possibility of loss or diminution of its power.

Dr. Posey, as surgeon of the Wills and Howard Hospitals, Professor of Disease of the Eye in the Philadelphia Polyclinic, an Ophthalmologist of more than national reputation, and also Chairman of the Commission on Conservation of Vision, of Pennsylvania, is certainly well qualified to handle this subject with a wideness born of great and varied experience.

The book is very well gotten up, profusely illustrated, and does great credit to the publishers, The J. B. Lippincott Company.

The work is not an exhaustive treatise on the eyes, but is intended for the busy practitioner and the general public, and is a description of the more common diseases of the eye, and also the manner in which this organ is affected by the general health, and how the general health may be affected by eyestrain and kindred conditions.

Many excellent suggestions are brought forward, such as avoiding the sending of children too early to school or kindergarten, while the eyes are still so young that they are very easily influenced and moulded into erroneous conditions affecting the refraction in later years.

Also his suggestion that all children should have their eyes carefully examined before starting school, with the idea of discovering any errors which may be corrected.

Likewise attention to position and illumination, both for the child and the adult, is carefully gone into.

The point that increased care of late years to correct and remove eyestrain has caused a decided diminution in the number of cases of cataract, is, in the mind of the reviewer, well taken, and founded upon facts brought out by many observers.

Schoolroom Hygiene, Illumination, Adjustable Desks, Position of Body when Studying, etc., are well worked out.

The chapters on Protection of the Eyes from Injuries and the Care and Education of the Blind, are well written by the author and his associates and make most interesting and instructive reading.

In conclusion we would say that this is a book that would well repay anyone for the time spent in the careful perusal of every page, and while some parts are too technical for any but the eye specialist, yet on the whole, most of the subject matter is within the reach of those for whom it was prepared.

NELSON L. NORTH.

Deaths

BENJAMIN ISAAC COMAN BUCKLAND, M.D., Auburn, died December 24, 1918.

CLYDE L. CAREY, M.D., Elmira, died January 6, 1919.

G. NEWTON FERRIS, M.D., Brooklyn, died January 28, 1919.

CHARLES D. KELLEY, M.D., Mt. Vernon, died January 16, 1919.

THOMAS KELLY, M.D., New York City, died January 17, 1919.

VIRGINIA H. MCKNIGHT, M.D., Fair Haven, died December 28, 1918.

JOHN C. O'BRIEN, M.D., Elmira, died about January 9, 1919.

FRANK P. SCHNEIDER, M.D., Rochester, died December 31, 1918.

JOHN E. WADE, M.D., Brooklyn, died January 17, 1919.

Medical Society of the State of New York

ORGANIZATION

Officers

The officers of the Society are a President, three Vice-Presidents, a Secretary, Assistant Secretary, Treasurer, Assistant Treasurer and the eight District Councilors.

House of Delegates

The House of Delegates consists of 150 Delegates elected by the County Societies, each Society being entitled to as many Delegates as it has Assemblymen in the State Legislature.

The officers of the Society and the Chairmen of the standing committees (Scientific Work, Legislation, Public Health and Medical Education, Arrangements, Medical Research, Medical Economics), are *ex-officio* members entitled to vote.

Council

The Council is a body of twenty-one members consisting of the President, the three Vice-Presidents, the Secretary, Treasurer, retiring President of the past year, the eight District Councilors and the Chairmen of the standing committees.

It is required by the By-Laws to meet at once for organization, after the adjournment of the Annual Meeting. Regular meetings must be held in May and December, and may be held at such other times as necessity may require.

The Board of Censors

The Board of Censors consists of the eight Councilors together with the President and Secretary of the Society. It is an appellate court and meets only as appeals may require its action.

District Branches

The State is divided into eight District Branches, each of which elects a President, who is, in addition, a Councilor of the State Society. They take office upon the adjournment of the Annual Meeting of the Medical Society of the State of New York, succeeding their election by the District Branches. The first four Branches elect officers on the even years; the remaining four Branches elect officers on the odd years.

The Councilors are members of the House of Delegates, the Council and the Board of Censors.

Standing Committees

The standing committees are six in number, the Chairmen being members of the House of Delegates and the Council.

Scientific Work: Consists of a Chairman, elected by the House of Delegates, a member appointed by the President of the Society and approved by the Council, and the Chairmen of the different Sections.

Legislation: Consists of a Chairman, elected by the House of Delegates, and the Chairmen of the Legislative Committees of the different County Societies.

Public Health and Medical Education: Consists of a Chairman, elected by the House of Delegates, and eight (8) additional members nominated by the Chairman and approved by the Council.

Arrangements: Consists of a Chairman, elected by the House of Delegates, and seven (7) additional members nominated by the Chairman and approved by the Council.

Medical Research: Consists of a Chairman, elected by the House of Delegates, and one member for each 200 or fraction thereof of the membership of the eight District Branches, nominated by the Chairman and approved by the Council.

Medical Economics: Consists of a Chairman, elected by the House of Delegates, and four (4) additional members nominated by the Chairman and approved by the Council.

Reference Committees

Immediately after the organization of the House of Delegates at each annual session the President shall appoint from among the members present such committees as may be deemed expedient by the House of Delegates. Each committee shall consist of five members, unless otherwise provided, to be appointed by the President. These committees shall serve during the session at which they are appointed.

Special Committees

Special Committees may be created by the House of Delegates to perform the special functions for which they are created. They shall be appointed by the officer presiding over the meeting at which the committee is authorized, unless otherwise ordered by the House of Delegates.

The following Special Committees have been appointed to report to the Annual Meeting in 1919:

On Hospitals to Co-operate with the Council on Medical Education of the American Medical Association: Consists of four (4) members and chairman.

On Narcotic Addiction: Consists of five (5) members; Edward B. Angell, Chairman.

To Consider Economic Methods of Caring for the Public Health: Consists of five (5) members; F. Park Lewis, Chairman.

To Consider the Establishment of a Legislative Bureau of Information at Albany. Consists of five (5) members. George W. Kosmak, Chairman.

To Confer with the State Department of Education for the Purpose of Furthering Prosecution of Illegal Practitioners. Consists of three (3) members. Arthur G. Root, chairman.

Prize Essays: Consists of three (3) members, elected by the House of Delegates for a term of two years.

Committees of the Council

The Council is the Finance Committee of the Society and has control of all publications and is entrusted with the power to pass upon County Society By-Laws. For the speedy execution of these duties it appoints annually three committees:

Finance: Consists of three (3) members of which the Treasurer has always been the Chairman.

To Pass Upon County By-Laws: Consists of three (3) members of which the Secretary has always been Chairman.

On Publication: Consists of five (5) members having immediate supervision of the Society's publications.

Sections

There are six (6) Sections: Medicine; Surgery; Obstetrics and Gynecology; Eye, Ear, Nose and Throat; Pediatrics; Public Health, Hygiene and Sanitation.

The election of officers of the Sections is the first order of business of the afternoon meeting of the second day of each Annual Session. The Chairmen of the various Sections are members of the Committee on Scientific Work.

Delegates to American Medical Association

The Medical Society of the State of New York is entitled to eleven (11) Delegates and eleven (11) Alternates; six Delegates and six Alternates are to be elected at the Annual Meeting in 1919.

Annual Meeting

The time and place of holding each Annual Meeting is decided by the House of Delegates. The next Annual Meeting will be held at Syracuse on the week of May 5, 1919.

For State Society Officers, Committees, Section Officers, etc., see January Journal.
For List of County Society Officers, see March Journal.

Total Membership, February 1, 1919—8,315

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

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The Medical Society of the State of New York is not responsible for views or statements, outside of its own authoritative actions, Published in the Journal.

Vol. XIX. MARCH, 1919 No. 3

EDITORIAL DEPARTMENT

SYRACUSE was originally located on the shores of the Mediterranean. Looking eastward from the green hills of Sicily, it had an enviable location and was regarded as one of the most beautiful cities of the ancient world. The Syracusians were an independent, self-respecting and liberty-loving people. They waged fierce and successful wars successively against Athens and Carthage, but were finally conquered by Rome, by sheer force of numbers and a relentless autocracy.

Syracuse will ever be honored as the home of Archimedes, a mathematician second only to Euclid, and the greatest civil engineer of ancient times. It is an interesting fact that towns are chiefly remembered in history by the great citizens they have produced. Archimedes invented the endless screw for raising water to higher levels and the tackle-block and pulley. When the Roman triremes approached too near the seaside fortress of Syracuse, he cast out great hooks, seized the prows of the triremes and hauled them upon the rocks. He set fire to the Roman fleet lying in the harbor by a series of mirrors and burning glasses. He declared he could move the world by levers, if some one would furnish the fulcrum. There was no Goethals or Barclay Parsons in those days to furnish the fulcrum and Archimedes was obliged to leave the task to Modern Syracuse.

In 1786 Ephraim Webster transferred Syracuse from the shores of the Mediterranean to the banks of Onondaga Creek, and it is alleged that he founded certain salt wells for the financial support of his new city. Certain it is that it thrived mightily and during the last century regained its supremacy. We are creditably informed that it is now living on cordial terms with its ancient adversaries—Athens, Carthage and Rome.

Modern Syracuse is one of the most prosperous cities of the Empire State. It is a railroad center, accessible from all points. Trolley lines radiate from it and state roads converge upon it from every direction. It is a beautiful and attractive city and furnishes much of interest to the visitor. It is not a mercantile and manufacturing center alone, but a renowned center of classic and medical education. The University of Syracuse, looking down upon it from the heights, is one of the largest educational institutions in the country, and has a national reputation. The zoological garden, looking down from the heights across the valley, is one of the finest in the country. As in many other cities of Central New York, the broad streets and avenues are rendered doubly attractive by shade trees of superb growth.

Syracuse lies in the heart of Central New York, a country that especially invites approach by automobile. It is a rich agricultural region, prosperous and well kept, with handsome farm buildings, broad smooth fields, orchards and vineyards. The lake region of Central New York is one of the most beautiful of its type in the world. The superb state roads give easy access to Syracuse through this garden spot of the Northern States. We can do no better service to the members than to counsel them to go, if possible, to the annual meeting by automobile. Syracuse offers admirable garage facilities to those who may wish to remain, and ample parking space for those who go for a single day.

The Medical School of the University of Syracuse is generally regarded as in the first rank. It largely supplies practitioners for Central New York. Dean Heffron has been no small factor in placing it in this enviable position. Dr. Elsner, now lost to the profession of Syracuse and the country, was another large factor in raising it to its high standard.

The local conditions are ideal. The section meetings, the commercial exhibit, and the bureaus of registration and information will be all located under the one roof of the Court House, one of the handsomest structures of its kind in the country. It is located in the heart of the hotel district, and is but a few hundred feet from the Hotel Onondaga, the official headquarters. Midway between these two buildings is the Mizpah, with its great auditorium, where the general meetings will be held. The House of Delegates will meet in the ballroom of the Onondaga. Hotel accommodations, so important to the comfort of visiting members, promise to be adequate for a very large meeting.

The Syracuse meeting is certain to be large and successful. By May numerous physicians will have been relieved from the burden of war conditions, and will be anxious to return to normal life and civil practice. Many will seek the meeting as an opportunity to greet old friends and to demonstrate that they are back in their former fields of work.

The Syracuse Committee is headed by Dr. Dwight H. Murray, Vice-Speaker of the House of Delegates of the American Medical Association, who has had years of practical experience in these great meetings, both in state and nation. That committee under Dr. Murray is working in cordial accord with the Secretary's office to make this post-bellum meeting a red letter one in the history of the Society.

We do not need to add that President Halsted is adding his whole influence, personal and official, to make the meeting in his native city an unqualified success.

The commercial exhibit will be a factor of more importance than ever before. We have started out to make it second to none among the exhibits of State Societies. At the present writing we have already contracted with more exhibitors than have been present at any meeting for many years. The exhibit will certainly be creditable to the Medical Society of the Empire State, the largest in the Union. The officers realize, however, that success is not vested in them alone. They must have the support of the membership. It should be upon the conscience of every member to attend the meeting if it is possible, if not for more than a single day. By such attendance the Society will gain much, the members more.

The commercial exhibit is one of the most important features of the Annual Meeting. Here is presented an extensive array of surgical instruments and appliances, electrical apparatus and appliances of every variety, medical preparations, foods, and all kinds of medical requisites. Here the city physician in a half hour may see what would otherwise involve many visits to instrument and book shops. It is of even more value to the country physician, to whom such advantages are inaccessible. To him the commercial exhibit offers an opportunity of enormous value, which is given in no other place.

No exhibit, which does not conform to the highest ethical standards as to honesty and decent advertising is admitted. Hence it is a privilege, as well as a duty of the members of the Society to support the efforts being made to require decency and honesty in advertising.

Original Articles.

THE SCIENTIFIC STUDY OF DELINQUENTS—ILLUSTRATED IN TWO CASES.*

By WILLIAM HEALY, M.D.,
Director Judge Baker Foundation.
BOSTON, MASS.

THE following consideration and comparison of the main facts of two case-studies is presented particularly to demonstrate the common-sense values of scientific method applied in the field of delinquency.

Take the case of Concetta, a vigorous, well-nourished, immensely strong girl, of just fifteen, showing typically her Southern Italian parentage. Her apparent super-abundant health, strength of features, lively expression and over-development for her age in general physical and in sex characteristics make it at once obvious that there is a great deal in the physical self that has to be reckoned with in this young person.

The occasion of C. coming before us was a considerable show of delinquent tendencies over a period of years, culminating in her staying away from home for several days in a hotel with a man. Earlier, when eleven years old, she was reported for stealing small articles from school and money at the public library. Two years later her behavior in school was so troublesome that the teacher wished her withdrawn. The mother appealed to have C. sent away to relatives, because she was getting beyond family control. Another teacher reported her at thirteen years as being a big, strong likable girl, but very trying. She was impudent and sometimes went to picture shows during school hours. As a working girl at fourteen years, she went evenings to the movies and there became acquainted with an usher. She maintains that he met her mother and asked if they might become engaged. This was refused. Shortly before we saw her, C. lost her position in a factory, and instead of telling her parents she spent for days a large share of her time at the picture theatre. Then she had a quarrel with her father, and that evening after the show refused to let her usher friend take her home. She wound up by staying several days at a hotel with him. She explained to us that this was quite all right, because she intended to marry him some day, as this is an Italian custom. (By the way, it is not at all true, even for her class of Italians.)

The young man was arrested and jailed on the complaint of the parents, and the girl herself was brought to the Juvenile Court.

Through the coöperation of the parents we obtained what is probably a fairly good family and developmental history. The parents are a little above the peasant, street laborer type, the father being a steady-working baker, and they have been in this country eighteen years. They are not at all alcoholic. The mother is a strong, very vivacious and neat young-looking woman. For anything bearing on our case the obtainable history of the two families seems to be quite without significance.

C. herself is the eldest of seven living and healthy children. She was born when her mother was only seventeen and about a year before her parents were married. Developmental history brings out in emphasis the vigor of this girl, who has never had anything except the lightest ailments. She was large at birth and walked unusually early. One of the other children was the only member of the family known to have had a convulsion. C. has been helpful at home, and prior to the last year was very affectionate to her family. She went to school at six and reached the seventh grade at fourteen. She attended church and Sunday School regularly, and sometime earlier took books from the library. As a working girl she brought home her money regularly. However, she had never held a position longer than four weeks at a time.

Careful medical examinations at about the time we saw her brought out nothing else of significance. She had a few carious teeth, but that was practically the only defect.

The usual diagnosis of C. on the mental side was undertaken. Tests brought out striking facts. In the first place, it should be stated that the girl entered with some zest into our work with her. She wanted to make her personality and her views of the world plain to us. She was eager and indeed voluble. It was clear that she did not always make the greatest effort to succeed in part of her work, and she proved careless where she might well have been quite accurate, as in some simple arithmetic, and she was often lacking in the deliberativeness which leads one to use rational methods of solution of tasks. On the Binet system she ranks through twelve years, far enough to show that she was not feeble-minded, and as far as the tests are worth much. On different parts of her school work she ranged in performance from fourth to seventh grade, the latter being as high as she had reached. Working with problems presented as concrete material, C. showed definite planfulness and was fairly speedy. She demonstrated just fair powers of mental representation. Her memory span was not up to the average, but was clearly within the limits of normality, and in learning ability she abundantly proved herself above defective grading.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 23, 1918.

Where C. showed prominent weakness was in power of mental control where she had to do a task that required continuous, careful thought. Even on the tests for simple controlled associations, as where reaction times are taken in naming opposites to words given, she made errors and failures on several lists of words quite beyond what was to be expected of her years and schooling. Then her many careless errors in simple arithmetic showed the same fault. But the trouble stood out even more distinctly in her work with both the simpler and harder well-known tests for ability to follow printed directions. Here she made an excessive number of errors, showing, not lack of knowledge, but lack of ability to keep her mind on the task. And of even greater significance was the result on the continuous subtraction test, where, although she could do arithmetic as far as division involving fractions and decimals, she failed badly to subtract a simple number such as 7, or even 4, keeping the remainder in mind as she constantly repeated the subtraction. And as for the task of subtracting two small numbers alternately from 50, she gave it up in despair.

Equally enlightening were C.'s interviews with us. She met us frankly and talked most freely. According to her story, her mother wanted her to graduate, but "I never liked school; the teachers were all too fussy." And then she adds, "I guess it's me; I've got a high temper and I don't like anybody to contradict me." She said trouble ensued because she answered the teachers back, and she found that the girls didn't like her. She went for a time to a special domestic science school, but got into the same sort of trouble there. She fully acknowledges that when she was younger she used to take things at school, mostly she just "found them" and appropriated them. Concerning her earlier recreations, the following incident she gives as a sample of the way affairs went on with her. She belonged to a club at a social center and one day when they were dancing she "punched a girl in the face" because the girl called her some name. At the library she was told to behave better or not come back, so she ceased having any interest in reading. Then at home, "the children get me mad and I start to hit them. When I'm mad I say anything. If anybody starts a fight with me I give it to them back." She freely tells of many quarrels with girls and she now has hardly any girl friends. At home she quarrels frequently with her father. At the factory she first heard of much in the way of bad sex affairs; the girls there were pretty free in their talk. She denied ever having had any special temptations to steal or inner temptations of any sort. The affair with the usher was as already set forth.

The upshot of even her own story was that she had been found everywhere difficult to manage during school age, and thrown later on her own responsibility she still evidenced very marked lack of self-control.

C.'s home environment was as follows: The family consisted of seven children and the parents, C. being the eldest. They lived in a small and consequently crowded apartment in one of the most congested tenement districts of the city. The home was visited and found as neat and tidy as one could expect, but poorly furnished. There was absence of books and recreational interests. On the day the visitor went there two of the younger boys were out of school because their only pairs of shoes were at the cobbler's.

The nature of this girl's personality type was clear enough by the time we had seen her three times and obtained the above facts. It was as easy to size up as were her mental capacities through these several hours of work (short enough time, indeed, to spend on diagnosis of the case when society was ready to set in motion, through probationary effort or otherwise, months or years of therapeutic endeavors). C. was very evidently an individual who took the world most objectively. She was strong and stormy, constitutionally buoyant, self-assertive, in the light of her own self-justified impulses finding her own behavior readily explicable, craving activity and excitement, never contemplating her own conduct as a matter for her to take in hand and modify.

At this point we are ready to consider the diagnosis, in the most scientific sense, for the sake of prognosis and recommendations. Physically, is the girl normal, or, at least, has she any ailment or characteristics that bear in any way upon her conduct tendencies? We find no stigma or evidence of defect. In particular, we can get not the slightest suggestion of even any covert form of the disease which stands in most frequent relation to such uncontrolled behavior, namely, epilepsy. She shows no other signs of possessing an epileptic personality than the temper outbreaks, which, by the way, were evidently excessive reactions to provoking environmental stimuli, rather than being predominately autogenetic, as is frequently the case in epilepsy. Furthermore, in such a case as this there must be definite ruling out of abnormally strong sex feelings and impulses, particularly, the psychophysical phenomena which have their greatest expression in the classical cases of nymphomania. Fortunately this latter very grave disorder is decidedly rare, but every now and again one finds among delinquents cases which verge toward it and for the sake of critical diagnosis it must be considered. In this instance there seems to be no exaggeration of physical sex stimuli beyond what one would expect from the general makeup of the girl.

But these points do not exhaust the physical aspects of the case. As we saw at first, the setting of C.'s conduct problem is striking on the physical personality side. If we think of normality in terms of age norms, then C. is overdeveloped in size and strength, and is decidedly premature in her already well-marked sex characteristics. She has vigor that is unfortunately skewed from advantageous correlation with her mental immaturity. It is often, both for society and for the individual, a misfortune that a young adolescent, undeveloped in self-discipline and adult experience and in powers of inhibition should have adult stature and vigor, to say nothing of possessing, as in this case, strength and energy exceptional, even for an adult. Such energy is bound to seek expression in ways not compatible with good morals if the facts of physical life are not reckoned with and if safety outlets are not provided.

Classically, delinquency is supposed to be the offspring of physical defect and undernourishment. However this may have been proven in foreign communities, we have elsewhere shown the age-weight differences during years of beginning delinquency to vary in no such way from the general norm. This present case presents no tremendous exaggeration in the opposite direction, such as do some we see, but C., 5 ft. 3, and weighing 138 pounds at just 15 years, goes well above the norm. As a matter of fact, we found the girls as they came before the Juvenile Court in Chicago averaging much above the standard age-weight curve.

The next question is whether we shall think of C. properly in terms of mental deviation. Let us first think of a psychosis of any sort. The only sign that in any way presents itself is her excitability. This is a reaction phenomenon with her, nothing else; she sits and behaves quietly enough if nothing special from the outside impinges upon her personal world. And we find no evidence whatever of periods of depression. We might dwell upon constitutional excitement or hypomania as being the category in which we might possibly classify C.'s excitable tendencies. But here again the symptoms are not constant enough, although they are strong enough at times, to warrant us in this pigeonholing. And, after all, we have no right to think of C. except as a member of a special family and special race. Does she deviate in excitability sufficiently from her people to be fairly considered abnormal? We can answer this at once; she rings true in this to her racial type; the difference being that instead of beating her head against the wall or tearing her hair in her family circle, her reactions of excitement are not confined to the uncritical confines of her home. She quarrels in school and strikes other girls and leaves her employment when she gets angry. It is in a larger social circle that she shows her failure to inhibit her own impulses, that is the difference. It appears, thus, that not even a minor psychosis can be fairly said to characterize her.

About the other great class of abnormalities, namely, mental defect, we may say that by tests and certainly by her school career and her earning powers and the general impression that she makes she does not belong to the grade of those who are usually designated as feebleminded. About her having a higher form of defect, and thus being somewhat subnormal, we are not so sure, but this perhaps is a matter of little import since very many people who get along in the world without becoming delinquent unquestionably belong in the lower 5, or 10 per cent intelligence group. Much more significant is the fact which we have already given, namely, that C. certainly does prove herself to have one special grave defect, namely, disability in mental control, and that this, as is so frequently the case, spreads over into lack of control of her physical and temperamental impulses. Whether this is a temporary or permanent defect it would be hard to say. We have been on the track of this problem for years, and are not at all sure that one can safely predict the status at maturity of an individual with this defect detected earlier. It seems very probable that years of experience and suffering and stress and growth toward general greater stability does sometimes bring about a surprising growth in power of self-control, but then, unfortunately, not in all cases. So C. must be regarded as a deviate and so somewhat abnormal in her defective inhibitory powers.

In conference we agreed that C. had an aggressive, lively, strong personality, which was based on a strong physique, and that she was uncontrolled and really defective in powers of control, setting no inhibitions upon sudden desires and whims, or upon any of her felt needs for self-expression, physical or mental. Her flares of temper were only one expression of her whole show of lack of self-control. Prognosis was to be set forth safely only in terms of this, her personality characteristics. Thinking of her training, and particularly of her dull life at home, we felt that she needed above everything specific training in self-discipline and in realization of life's issues, with constant opportunity for outpouring of her energy in hard physical effort. When C. has gained enough in years so that she is no longer prematurely developed, it is possible that better correlative adjustment will naturally ensue between her impulses and her will and her power to control them.

We found that an immensely specific and important question had to be answered at once: Would we recommend her for marriage? The young man in jail, it was found, came from quite a respectable family, and was now, as he had been before, entirely willing to marry C. She, for her part, had already stated that if he did not marry her she would kill him by shooting. And, indeed, she had boasted to some girls in a home where she had stayed for a day or two, that she had a razor hidden and would use it. At this place she stole, while her case was pending, $20, evidently to help her in some way to get the whole matter settled.

Now, this problem of early marriage is one that sometimes comes to the court clinic. Marriage, or its annulment, is proposed by families and by lawyers and the judge likes to know the extra-legal aspects of the situation, and, indeed, from the standpoint of our civilization it is a vitally important matter. Especially by members of the Latin races we are told in the clinic that this early marriage is quite the usual thing, and will do no harm in any way; rather, it offers a safe way out of an unfortunate affair. Of course, problems of feeblemindedness and physical disability are sometimes involved, but in this case let us see what there is that we really know that bears on her marriage. On the physical side, we cannot allege that this girl would be harmed, or necessarily produce offspring unfavorably. But can one say that she is self-controlled enough, or at all likely to exhibit the normal instincts and sacrifices of maternity? One could not doubt that possible cares and stresses might lead her to develop some greater degree of self-control, but yet we were highly skeptical of this on account of her plain exhibition of real defect in this direction. And from our experience in other cases which turned out just as this one has, we have learned the great chance of failure of early matrimony, at least in our communities. We should say that C. might possibly be tried as a placing-out experiment in a home with a woman of some strong personality, entirely away from her old environment, to do housework or even some farm work, but if such a place could not be found, she had much better receive the training at once in a good industrial school for girls, in either case with particular emphasis upon training, as already mentioned. Merely putting her to work under protective auspices would do nothing more than tide over some years of what might possibly prove to be her greater period of instability and self-assertion.

But this whole matter was taken out of the hands of even the court, for suddenly the parents took the girl to the jail and her name was saved, as they said, by marriage to the young man there, who, in turn was promptly released. She at once went to live with his mother, setting up no household of her own, having no particular cares, nor being compelled to work. She soon sought amusements during the daytime and tired of her young husband's complaints and attempts to hold her in. Inside of a month or so she began associations with even other men, to the extent of staying away over night. Sailors she found particularly attractive, and her husband once traced her down to one of the beaches, where she was having an exciting time with four sailors, to whom she ingenuously complained that he was annoying her, and they, naturally, promptly drove the young husband away. He then, when she was away for several days, besought the services of the court. When she was found she was sent to an institution, he still maintaining that he would be willing to live with her after she had been taught her lesson.

In considering the prognosis of this case, we are bound to keep in mind the problem of whether or not this girl is going to show improvement in powers of self-control, or whether it is an innate defect which she can never modify. If the latter, it does not necessarily mean that she needs segregation for many years, but at least she should be given a highly protected environment such as a married woman, for instance on a farm, sometimes has. We would also insist that our experience shows that stabilizing of adolescent girls does not take place so quickly as some would think, and that good efforts in their behalf often do not bear full fruition until mid-adolescence has been passed. In following up cases we find frequently that girls have failed miserably to be able to handle themselves until they are 19 or 20, even when they then did well. This is a matter of great interest for legislators and others who have to fix ages for courts and institutions and probation, as well as for medico-psychologists and others who offer prognosis.

The common sense of careful discussion and differential diagnosis is illustrated in the case given, but the tremendous value of deep study of the individual can be shown even better in other types. It hardly seems profitable in this contribution to offer instances of obvious feeblemindedness or psychosis, or of the effects of poverty or of other environmental conditions, or of the result of association with bad companions. Because we are an institution for young women, let us discuss the case of another girl, although girls form but one-third of the material usually seen as juvenile delinquents. And then this case presents in its essential features factors that we often find in studying males. It is in outstanding contrast to the first case. Though there is time to give it only in brief, the great differences should be easily discernible. This case, too, fairly represents a type.

We studied Mona when she was 13 years old. Before we saw her we received a long history of the superficial details of the case from an efficient organization which had been working with her in the small city where she lived. Many valuable points about the social and other environmental background were set forth, and the opinions of many people who had come in contact with her, as well as of the girl's behavior itself.

The first complaint came from the mother, who sought advice because Mona did not yield to either discipline or encouragement in breaking an extensive habit of stealing money from both her mother and neighbors. The mother thought her peculiar and stubborn and difficult to understand. Mona was also truant occasionally and troublesome in other ways. Other people approaching Mona concerning her behavior were met by a puzzling attitude on her part, and an experienced social worker felt that the girl showed a definite tendency toward delinquency. At school the report was that Mona was decidedly good in scholarship. Her only fault there was truancy, and then she went off by herself, and not as most children do to have a good time with someone else. On one occasion she journeyed to a neighboring town and spent all day with a stranger, a deaf and dumb woman. In school Mona complained of headaches and backaches and certainly simulated defective vision to the school doctor. It was about this time that her mother had put on glasses, and evidently Mona thought she also would like to wear them.

The mother was a woman of thoroughly good repute, who had two children younger than Mona, and who works hard every day to support her family. The father of the children had been dead for four years. It is Mona's general unreliability which has worried the mother more than anything else. Attempts to meet the situation in an ordinary way by warning Mona led to nothing, and relatives all felt that the mother was too hard-working and too worn out to cope successfully with the child. One thing that led the organization to feel that there must be "physical trouble," or something unusual in the background, was that Mona had been heard repeatedly screaming in the house, "Oh, don't beat me," when it was found that she was alone in the house. This attempt at deception was thought to be very peculiar. On the whole, however, complaints about Mona amounted to nothing much except in regard to her stealing. School conduct was usually very good. An alienist who went somewhat into the trouble recommended that the mother be considered as incapable of controlling the child. Mona was then placed in a sanitarium before we saw her to receive whatever treatment was necessary. There her posture was found defective and correctible lateral curvature of the spine was diagnosed. Some teeth needed attention. She was thought to be quite normal mentally. At this hospital she falsified most readily and stole repeatedly even considerable sums. She appeared docile and never sulky or impudent, but could not be trusted to obey. The report from there states that her delinquencies do not fit in with her mentality, for instance, she took some underwear and placed it in her own drawer, without any attempt at concealment. No evidence of hysteria or epilepsy was obtained. Of course, since she kept up her delinquencies it was felt that attempted remedy of her physical ailments had not reached her case at all.

Then the mother came to see us and we found her an intelligent and very coöperative, though high-strung, woman, who gave a thoroughly lucid account of her family. The history of the father and of his family is quite negative. He was a good, easy-going, calm man, who knew little about his relatives. The mother herself had chorea as a child and has always been nervous. She is an extremely hard-working and conscientious woman. The maternal grandmother suffered from headaches and some sort of fainting spells when young. One maternal uncle is deaf and dumb. Mona's little brother and sister are quite normal and healthy. Her own developmental history was negative on the physical side. A few years earlier she used to have many bad dreams and night terrors. Now she is a very nervous child and has long bitten her nails excessively. She wakes up very early in the morning and gets up and goes off and plays by herself. Mother thinks she was a difficult child to manage as early as 4 or 5 years, and says, "I love her, but I don't understand her at all. I wonder if there can be anything wrong with her mentally."

Mona began stealing when she was about 7 years old, when her father was alive. He used to bring home the money he had collected and found many times that his accounts were not straight in the morning, but they never thought of Mona having taken it. Finally they discovered that she had been stealing small change from her parents for a long time. They then punished her in many ways and tried to reason with her, but nothing ever helped. "She has stolen constantly ever since." She is an unusually reserved child, has no friends. Never confides in anyone. In spite of the fact that she is so bright she will lie about her delinquencies when she knows perfectly well that she will be found out in a few hours. At times she seems sulky and determined. Last year she took $5 from a neighbor and went to an amusement park with a companion. Splendid reports came from school about her scholarship. Mona always seemed irritable and cries if she can't do exactly what she wants. Although the mother is so poor Mona seems always to have a little money when she is outside the home. She is very fond of reading and reads Sunday School stories. She is lazy in some ways and in others very energetic. She likes to scrub floors and clean stoves and do anything that is big and heavy. Before her father died he said he was afraid she would some time have to be put in a reform school. When she was quite young she began to have quite a good deal of curiosity about the origin of life, and her mother has attempted to explain to her all about sex phenomena in a natural way. Curiosity seemed to come in spells and be almost insatiable at times. Her mother told her to always come and inquire about these things. Her mother has not wanted her to mix much with other girls, because she has been afraid that she would engage in some of her delinquencies elsewhere and get into trouble. Mona has recently been obliged to go to the place where her mother works and wait until it is time to go home. Her mother doesn't think she has ever come under the influence of bad companions or of pernicious ideas from any source.

We found a little girl, quite short for her age and in general only indifferently developed, but of a lively and intelligent expression, and with no sensory defect. Evidence of excessive nail-biting. Very slight tremor of outstretched hands, but deep reflexes rather minus than otherwise. In short, there was nothing of significance found by physical examination, and we were interested to find by Snellen's chart she was able to read 20/20, each eye.

Mona was given a rather thorough mental examination. She was found to have distinctly good all-round ability, to have a so-called intelligence quotient of 105, according to the Terman modification of the Binet scale. On many other tests she did well, showing special facility with language. Not the slightest evidence of aberration discovered at any time, nor of any sort of mental abnormality, as her mother suggested.

To us Mona readily acknowledged that she had for years stolen excessively, that is, on very many occasions, and nearly always money in small amounts. During several interviews we went with her into many details of her life and companionship. And only by doing this did we open up a situation which has unquestionably been commandingly dynamic in her life. She has definite temptations to steal, which often she does not give way to at all. When truant, she would go home sometimes, she tells, and thinks about stealing, not necessarily any specific thing that she wanted, but in this following an inner impulse to steal. She gives us a recent definite illustration of her feeling of wanting to steal, even though, as she says, she didn't put her hands on anything, or have any special object in mind.

Going further with the analysis, we find that she remembers clearly the first thing that she ever stole and her feeling of excitement concerning it. Since then she has frequently experienced this same emotion. After she has taken things she sometimes feels trembling and all-gone. Beforehand, she has a queer feeling in her stomach and it goes all over her. Thus, there is a very definite mental phenomenon, particularly of an emotional order, connected with this girl's delinquencies.

By this time we felt that though we could size up the situation in general we still lacked that specific knowledge which we have come to know by experience in other cases is essential for accurately and economically based moral training. Here was this little slip of a girl, physically normal enough, but showing signs of nervousness, mentally intelligent and ambitious, who was pursuing a career of conduct quite inimical to her ambitions and interests, and the facts were recognized in this light by herself. She felt herself the victim of impulses which she could not control and which she did not understand. How did such impulses originate? Of course, on direct inquiry she could not tell us this. Very few delinquents indeed ever appear to have thought back to beginnings. In the light of what we know about the treatment of such cases it was clearly our business to explore the genesis of her difficulties.

The account of our several interviews would make a long story—it will suffice to give the principal points as they were elucidated. She remembers well her first theft and her curious, excited physical sensations at that time. It was at a neighbor's house and her girl friends there suggested that she take a dime from their mother. Inquiry into other events in that household with these girls reveals that they used to undress their little brothers, and she remembers this very vividly. Gradually it comes out that the thought of these little boys undressed is frequently in her mind even nowadays and is closely associated with her thoughts of stealing, and they both are accompanied by feelings of excitement. She used to have a great desire to touch the genitals of these little boys. Still further back is an affair which made the deepest impression upon her. As a child of six years or so she went to a school where a partition separated the toilet for the boys from that for the girls. In this were some holes, and at least once an older boy put his penis through the partition while she was there. She was told about masturbation soon after this event. She has engaged in the practice at intervals ever since, putting up a fight against it, however, because she knew it was wrong. She had great curiosity to see the genitals of boys after this first affair. She used to undress her little brother to help her mother and used to want to touch him, but claims she never allowed herself to do so.

To get more clearly at the mental facts, we endeavored to trace with her any ideas or images immediately antecedent to a recent episode of impulse to steal, and we found the whole affair inextricably involved with these persistent sex ideas. Indeed, both ideation and mental imagery concerning these experiences years ago were clearly obsessive with her at times. It appears that she by no means steals always when she has the temptation to take things and she has also often fought against masturbation.

Many curious details of interest were brought out in her direct narrative, without the slightest suggestion from outside. Of special import was her account of the recurrent vivid seeing in her own mind of that affair at school. "It's in my mind. It comes to me; it comes and goes. It's just as if I saw it, the school and everything. He didn't know I was there." After her first experience in stealing she regularly took money out of her father's trousers. She makes much of extraordinary dreams about snakes. About her stealing she says that it is all in her head. "I feel I want something. I think about it. I just think I will take anything." After taking it she has a feeling of relief, "I've got it; it's all right."

We were interested to find that her mother had never known in the least about these thoughts or habits. The little girl explained to us that her mother had talked to her "about nature," and she, in turn, never told her mother about what was going on in her own little mind.

The case should be clear by even these few excerpts from our history. We had many other corroborative details. No one can doubt the utter futility of attempting to treat such a case of delinquency as this without studying the etiological factors. The shortest, if not the only way to modification of the mental and moral life in this type of an individual problem is through medicopsychological analysis. The origin of impulses it is necessary to know, and they are only to be traced through the inner mental life, sometimes difficult to get at, sometimes comparatively easy if one has had experience and is sympathetic and tactful.

The great detail with which the mental life is gone into by psychoanalysts we have proven for this class of problems, at least, in young individuals, to be quite unnecessary. Indeed, one would question the safety of making a child conscious of every cog in the mental mechanism. We have repeatedly seen such a case as this absolutely alter in conduct tendencies through a fair amount of exploration and a rational attempt at re-education, aimed at both giving adequate mental content to push out of mind the old ideas and at development of self-control. Treatment must be individual, and at the hands of a person who has some comprehension of the real nature of the trouble, and who can institute commonsense measures of reconstruction. The fact that instances of the most prolonged delinquent careers due to mental conflicts are by no means rare is in itself evidence of the part that professional effort should play in the treatment of delinquents.

THE MENTALITY OF ADOLESCENT DELINQUENTS.*

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LEST there be misunderstanding regarding the title of this paper, it may be wise at the outset to make two statements: First, there is no unvarying type of mentality for adolescent delinquents any more than there is such for adolescents who have not come in conflict with the law. The second point which I would emphasize at the beginning is that adolescent delinquents are by no means all mentally abnormal.

It seemed to me desirable to make these two statements, because it is not so long ago that one heard a good deal of "the criminal type," a term which indicated that there was a more or less constant physical and mental makeup for misdemeanants. All workers in criminalistics are indebted to Dr. Healy, who not only helped to explode this criminal-type theory, but who has in a characteristically constructive way laid emphasis on the importance of the study of the delinquent as an individual.

Only when treated thus can we understand what the delinquent is and why he is what he is.

The obvious advantage of such a method of approach must appeal to physicians whose whole training and experience are concerned with studying and meeting individual needs.

The second point made—that adolescent delinquents (or delinquents of any age, for that matter) are by no means all mentally abnormal—was made because of the tendency of some enthusiasts to ascribe all anti-social behavior to mental defect.

To those who are seriously studying conduct disorders the fallacy of such a supposition is readily apparent, but others for whom "a little knowledge is a dangerous thing" are more easily misled. Within the past week a probation officer came to me regarding a 10-year-old boy whom I had just started to examine. The case was to be called immediately, instead of two days from then, as had been stated when the appointment was made. I explained that I was not ready to give a report, that all I could say was that the child was not feebleminded, which was evident from the psychological report. "Well," said the probation officer, "what more do I need to know?" The child was a truant and runaway, had stolen rather cleverly since he was six and was untruthful. It appeared to me that it was necessary to know a good deal more concerning him than that he was not feebleminded, if one were in a position to make a wise disposition.

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Concerning the mentality of adolescent delinquents, there is a wide diversity of figures offered by various workers, and it must be kept in mind that the group of delinquents available for study is a highly selected one, and generally speaking represents a less mentally able class than those misdemeanants who are not caught.

Dr. Healy, in his study of one thousand cases of young repeated offenders, classifies 17.9% as mental offenders (these figures include those of subnormal mentality as well as those definitely feebleminded), while 6.9% were psychopathic, leaving about 75% who vary in mental capacity from those considerably above the ordinary in ability and information to those who are distinctly dull.

Bronner, in a study of over five hundred cases of delinquents, both first offenders and recidivists, reports that the percentage of feebleminded is less than 10%. She characterizes the others as normal in ability, but makes no comment regarding possible psychoses or epileptic conditions which it is fair to assume existed in as large a group of such a character.

The psychopathic clinic for the juvenile courts of Manhattan and the allied boroughs reports for 1916 (the figures for 1917 are not available to date) that 44.6% of the cases examined were diagnosed as mentally defective. Here again no mention is made in the published report of psychopathic or other mentally abnormal cases nor is anything said of those who are normal, but whose traits of character have doubtless been responsible for their delinquency, especially when environmental conditions were distinctly unfavorable.

About 60% of the offenses with which these children were charged were against property.

We find in the course of our work with these young thieves that their property sense is often little developed. I am not prepared to say just how far this is a primitive reversion, a natural resistance to the institution of property. It is not strange that one finds it often in institution-reared children. In many cases it appears to be due to reaction to suggestion, to a spirit of adventure, to fear of ridicule from comrades, a desire to appear game.

To some a desire for spending-money seems an irresistible incentive. One boy whom I saw in court had been treated by boys in more affluent circumstances than he until his proud spirit rebelled and he stole money in order to restore his self-respect by returning his indebtedness. He confided also that he wanted for once to try "expensive seats" at moving pictures. Another boy haled to court by an irate parent, who could not see why Tony needed spending money when he got candy, gum and soda water from his father's store, had stolen in an excess of patriotic zeal when urged to buy thrift stamps in school.

A 15-year-old girl recently presented for examination, charged with being ungovernable, had been brought to court by an anxious mother because twice, within a short space of time, the girl had been away half the night, and on her return had told each time a lurid tale of having been overpowered by two men, from whom she escaped before they harmed her. There was no evidence of any injury to her clothes or person, and she had apparently suffered no nervous shock. She was an unusually bright girl, active and fond of outdoor life, and in the course of our conversation she said that she wished to become a journalist. She had won prizes for compositions and wrote for the school paper. Her imagination was vivid and she had all the egotism commonly attributed to adolescence. Shortly before her alleged adventures the family had moved to a sparsely settled part of Brooklyn, where she had no friends. It was evident that she had concocted her story in order to save herself from censure and restriction of liberty, but in striving for "punch" had miscalculated the gullibility of her audience.

For more than six years the New York Probation and Protective Association has been making intensive studies of sexually delinquent girls, and I am now in the process of analyzing five hundred such cases, the median chronological age of whom is 17 years 3 months.

In making the diagnosis of mental condition we used various psychometric and psychiatric tests, correlating with them reactions to social situations or emotional crises. Routine investigations were made regarding home conditions, school and industrial records. Physical examinations were made in all cases, and special attention was given to determining the presence of venereal disease, inherited or acquired.

In this group of five hundred, the following mental classification was made:

Normal mentality		140	28.0%
Mental deficiency		186	37.2%
Subnormality	65 (13.0%)		
Moronity	121 (24.2%)		
Psychic constitutional inferiority, including psychopathic personalities		132	26.4%
Mental disease		29	5.8%
Epilepsy		13	2.6%
		500	100.0%

The term *subnormal* we have used as suggested by Healy to cover a group standing between normality and feeblemindedness, who have greater educability than the latter, but who are clearly defective in some directions.

If we consider together the groups designated feebleminded and subnormal we have 37% who may be considered aments of varying degree. If we combine the groups diagnosed as *psychoses* and *psychic constitutional inferiority,* we have 21% of aberrational cases, only 2% of whom were regarded as suitable for commitment to state hospitals; 2.6% were epileptics, without other mental complications.

During the course of our study we have been impressed with the difficulty of classifying in any satisfactory way many of our cases. We realize, further, that even when classified mentally as feebleminded, psychopathic, epileptic, etc., we are far from understanding our patient and his relation to his delinquency unless we familiarize ourselves with his mental makeup, a very different thing from his mental capacity. Also it is imperative to have information concerning the background of our misdemeanant, his heredity, environment, habits, physical condition.

Not only, as has been said, are all social deviants not mental defectives, but in many cases of those who are, there is reason to believe that other conditions have been important, or even actual determining influences in misconduct.

Feebleminded people, "innocents" is the old, kindly term, are by no means all vicious. The statement sometimes made concerning them that they are all potential criminals, reflects on the conditions of environment even more than on these mentally unfinished individuals.

In an ideal state of society where their limitations were recognized and where they were protected instead of being exploited and used as tools by their mental superiors, they might live in a community as harmlessly and as usefully as they do in custodial institutions. In the latter, what they can do is emphasized and utilized rather than what they cannot do. This in itself prevents much irritation, which is inevitable in the competition encountered in ordinary community life, especially in a city. The mentally handicapped are obviously more vulnerable to various forms of social temptation than are those of ordinary mental developments, *e. g.*, aments are essentially a weakly inhibited group; they react readily to suggestion; they lack judgment, imagination, foresight, initiative. They are childish and irresponsible.

The following case history is typical of a feebleminded delinquent and demonstrates the need for early commitment to a custodial institution unless an exceptional home gives the equivalent oversight and protection:

Minnie A. was referred to the New York Probation and Protective Association by the Department of Justice as a witness against her husband in a white slave case. She was then about 20 years of age, a Catholic, American, pretty, pleasant-mannered, unaggressive. The father was a paretic, the mother had died of tuberculosis when Minnie was but 7. A paternal cousin was feebleminded.

Minnie was the sixth in a family of seven living children, none of whom were known to be delinquent except an older alcoholic brother. She had a poor record in a parochial school which she attended irregularly and most unwillingly. She was generally recognized as a feebleminded child and was not held responsible for running away or for lying, stealing, etc.

After leaving school she worked quite regularly for about two years, labeling bottles in a drug house, for which she received $5 a week. Association with bad companions led to late hours and to a break in her habits of industry.

When about 19 she was seduced by an Italian, and within a month, reacting to the suggestion of friends, she entered a house of prostitution. In the same unquestioning way she turned over her earnings to various procurers, one of whom she married merely as a means of protection for him when he feared arrest.

Although made to work hard as a mill hand by day and treated brutally if she objected to going out to solicit at night, she made no attempt to retaliate or to leave her husband. Her arrest proved a means of release for her. She was infected with both venereal diseases when examined at Waverley House.

After receiving extended specific treatment in a city hospital she was committed to a custodial institution, where she has earned a badge of honor for good conduct and industry.

It is a common experience to find that those who have been flagrant social problems are able to adapt themselves happily to the routine of an institution for defectives.

The case which I have chosen to illustrate the subnormal type is *Sarah P.*, a 17-year-old American girl, who was referred to us as a runaway, disobedient and headstrong.

Her parents were natives of Germany; the father had died of tuberculosis five years before; the mother was a quick-tempered, nagging woman, to whom Sarah was very antagonistic.

The latter was the second of five children; the first born is feebleminded; the third nervous and backward in school.

Sarah was essentially the tomboy type, fond of outdoor life and active sports. She was the leader of a girls' East Side gang, noted as a fighter and runner. She claimed to abide by a curious little code of honor which among other things held fighting with the fists to be good form, but hair pulling was tabooed. She was a constant truant and had reached only the 6B grade when she left school at 16. In the course of her mental examination she showed constantly an immaturity, although this did not suggest a definite amentia. She had good associational ability, good psychomotor control, was quick and accurate in putting through a routine task, but showed plainly a lack of training in application. She had a well-developed grudge attitude toward her mother and was quarrelsome with companions of her own age, but loved little children, a fact taken advantage of, when placing her in a day nursery, where she was a satisfactory and happy worker. Physically she was undeveloped, although menstruation was established at 13. Her chest was infantile in type, there was no axillary and little pubic hair. She showed a moderate degree of kyphosis, the result of a fall.

It is obvious that the various psychoses tend to make social adjustments difficult or impossible because of distorted viewpoints, *e. g.*, the indifference which is such an early and common symptom of dementia praecox is shown in the moral field of behavior as well as in others. In manic depressive insanity diminution of moral sense and accentuation of erotic tendencies are constant, while impulsive reactions are common.

The following case of dementia praecox (not then recognized as such) was referred to the New York Probation and Protective Association by the Social Service Department of a hospital:

Sadie L., a Russian Jewess, good looking, quiet, well mannered. A paternal uncle had committed suicide, following business reverses, and his son became insane after a love affair. All the paternal relatives are subject to headache and become easily confused.

A maternal aunt was violently insane for two years during adolescence, but recovered, married and had a large family without any recurrence of her mental trouble.

A brother is said not to have a strong mind; he is a rover, unable to do inside work.

Sadie had lived in the United States since she was 3 years of age. She liked school and made good progress, finishing her first year in high school when she was 14. Financial reasons forced her to leave and after four months in a shorthand school she secured a good position in a lawyer's office.

Her family reported that she was not given to making friends and that she had always been modest in her tastes and in her behavior.

Her work at first was satisfactory, but later deteriorated. She became violently in love with her employer, whom she accused of practising sex perversions with her. Her accusations, after investigation, were considered baseless. She began masturbation excessively, became dreamy and unable to apply herself to her work. Formerly anxious for independence, she cared not who supported her. On the street she boldly tried to attract the attention of men.

At times she feared insanity and pitifully begged to be helped to avoid it, but after she had been carried along for about two years commitment to a state hospital was necessary.

Mention should be made of the psychopathic personalities with whom instability is such a striking symptom and who find all adjustments so difficult.

Institutions find them constant problems. In their homes they complain from an early age that they cannot get along with their families. They seem never to succeed in getting the right focus of life.

Time does not permit giving illustrative cases of different types of personality, the characteristic traits of which, while not abnormal in themselves, may be pathological if exaggerated.

We have seen how imagination, egotism and a spirit of adventure, qualities common to normal adolescence, but because untempered by discrimination and fostered by uncompromising home rules, brought our 15-year-old romancer into court.

Over-assertion of individuality, another trait common to adolescence, may be socially disastrous when combined with stubbornness, as some of our cases indicate.

Ready suggestibility is unquestionably a fertile source of trouble among our juvenile delinquents and the list might be lengthened. I am not attempting to exhaust the subject in this brief paper, but am merely seeking to indicate how varied are the types of adolescent delinquents.

We believe that the attention now being paid to the subject of crime is more intelligent, and, consequently, more hopeful than it has ever been before.

It is obvious that the earlier misbehavior is studied, the easier it is to understand the different factors which underlie it, and the more possible it is to redirect cases whose paths have not become hopelessly crooked through long continued habit. For this reason, it is very important that juvenile delinquents be studied as well as those children who are problems in school, and this work should be greatly extended.

It is to physicians that one should naturally look for active interest in such matters, because more than any other class of people they are able to view the problem intelligently from physical, mental and social standpoints. Social workers and psychologists, necessary as they are in the study of misconduct, cannot take the place of medically trained people.

It has been expected that war conditions would greatly increase juvenile delinquency in this country, as has been the case abroad. Thus far, we have not realized our expectations, which is fortunate, but we cannot tell what indefinite prolongation of the war will bring. Now is a good time to extend our studies of exceptional children and conduct disorders. It is preventive work, and in my opinion it is a legitimate war measure. Physicians if alive to the desirability of such study can exert a powerful influence in their communities, and I believe will do so if impressed with the importance of the matter.

HOW TO AVOID SPOILING THE CHILD.*

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I AM going to say a little about the way the mind develops in human beings and in higher animals.

Biologically, the human being, like other higher animals, and lower animals, too, for that matter, is an organism striving toward certain ends. An organism is, biologically, something that strives to maintain its own life and to perpetuate and increase the life of its race, and the evidence of that striving is what we call the behavior of the organism. Behavior is the pursuit by living things of their own welfare and their own ends and purposes; it is the manifestation of striving toward ends.

We are conscious ourselves of our movements; our own behavior is associated with something that we call "mental," which goes on inside of us, and we come to the conclusion, on watching the behavior of other people, that they also must have something "mental" or "psychic" going on within them that is more or less like what goes on within us. So what we know about mind is based upon a study of our own behavior and its psychic concomitants and upon the study of the behavior of other people. We look into ourselves to see what happens in us when we behave, and we draw inferences regarding what happens inside other people when they exhibit behavior.

Through the work of the comparative psychologists we have learned much about the innate disposition of living animal organisms; the innate traits of mind, the things upon which behavior depends. The so-called instincts have at least three sides to them; they involve not only (1) impulses toward gaining the ends that the instincts subserve, but also (2) feelings, or sensation, of being affected, at the same time, and also (3) cognitions. To use McDougall's terms, in the exercise of an instinct there is "a knowing, a feeling and a striving."

I may mention a few of the more common instincts, well known to everyone: (1) the *nutritive instinct,* associated with the feeling of hunger and the impulse to take food; (2) the *motor instinct,* in young children to crawl and to walk; (3) the *instinct of flight,* when we recognize that we are in an unfamiliar situation or in danger; it is associated with the emotion of fear, and with a tendency to flee or hide; (4) the *instinct of repulsion,* for instance, if we taste something bad in our food it excites disgust; (5) the *instinct of curiosity,* where we see something similar to something we have seen before, and yet a little different from it; this makes us wonder and we have the impulse to approach it cautiously and to examine it to see what it is like; (6) the *instinct of pugnacity,* that comes into play whenever our impulses are opposed in any way; we are excited to anger and we try to remove the obstacle, or, if we cannot remove it, we try to destroy it; (7) the *instinct of self-abasement,* which becomes active when we see people whom we think may be superior to us; we often have a feeling of submission or of subjection to them, and we try to make ourselves less obvious and may even slink away and try to hide ourselves; just the opposite occurs with (8) the *instinct of self-assertion,* when we are in the presence of spectators whom we think may be inferior to us; we tend thus to have a feeling of elation, of well-being, and an impulse to boast; (9) the *parental instinct* (paternal or maternal) is excited at the sight of a child, or the sight of weakness, and to see cruelty inflicted on the weak excites in us a tender emotion and the impulse to protect, to cherish, to help; (10) the *sexual instinct* is concerned when the sight of one of the opposite sex (under certain circumstances) excites the feeling of lust and the impulse to approach, to fondle and to embrace; I might mention also (11) the *instinct of acquisition,* and (12) the *instinct of construction;* and there are probably still others. These are at least some of the instincts that the comparative psychologists have studied and made us familiar with. They are the innate traits with which all begin life, and our higher mental qualities and our total behavior are built upon the basis of these simple fundamental instincts. Gradually, through multitudinous knowings, or cognitions, we acquire a body of "knowledge," and through multitudinous feelings and strivings we acquire what we call "character." Knowledge and character are built up out of the workings of the simple instincts.

A word as to the nature of the "sentiments." These are very complex things; they represent associations of cognitions, with feelings and strivings. In other words, sentiments are complex feelings related to certain objects; we "love" certain things and we "hate" certain other things. For instance, the love of a child is a sentiment; the love of virtue is a sentiment; a love of power is a sentiment; the love of a church, the love of America and the love of the American flag are sentiments. We gradually develop also sentiments of hate. We learn to hate dirt; we learn to hate vice; we learn to hate disorder, and in this war we learned to hate German militarism.

Most important, perhaps, for social life is the development of what has been called the self-regarding sentiment—what is known as self-respect; this is not merely pride or self-love in the narrow sense. Self-respect is based largely upon a combination of the activities of two instincts, that of self-assertion on the one hand and that of self-abasement on the other. It includes the disposition of "negative self-feeling," and also that of "positive self-feeling." This self-regarding sentiment has had much to do with the origin and maintenance of social customs and with the development of the higher kind of conduct of human beings.

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* Remarks made at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 23, 1918.

Obviously among so many tendencies and impulses there must be a tendency to conflict, and unless we learn how to organize the lower instincts into sentiments and to organize the sentiments into well-directed aims and purposes in life, we shall have mental conflicts and loose, dissociated personalities. It is very necessary that the instincts and the sentiments should be organized into a unified mental life.

The education of a child, then, includes education in self-expression and education in self-control. A certain amount of repression of the impulses is necessary. The child must learn properly to repress, and the reasons for this. Of course, there are very bad forms of repression as well as good forms of repression. Dr. Healy will perhaps tell you that it is essential that each one learn how to repress in a proper way in order that he may not have a chaotic life.

As McDougall has well said, there are four levels of conduct; (1) the level of instinctive behavior, modified by pains and pleasures incidentally experienced; (2) the level of behavior that is modified by rewards and punishments in the social environment; (3) the level of behavior that is modified by anticipation of social praise and blame, and (4) the level of the highest kind of conduct, in which behavior is regulated by an ideal of conduct, the person learning to do what seems to him right regardless of the praise or blame of his immediate social environment.

Behavior will obviously be dependent (1) upon the kind of instinctive foundation we possess—our hereditary traits, and (2) upon the environment to which the nervous system and the organism as a whole is exposed. What we inherit from our ancestors and the influence of things outside us after we begin to develop are the two great underlying factors of behavior. Heredity plays a very important part, just as environment does. There should be no quarrel between the advocates of the importance of heredity and the advocates of the importance of environment, for both are very important. There is no sense, it seems to me, in minimizing the importance either of heredity or of environment. At present it is true we can do more to modify environment than to modify heredity. But let us recognize the fact that heredity is equally important with environment in the develoment of organisms and their behavior and look forward to a future when we may wisely subject both factors to suitable control.

There can be no doubt that many of the psychopathic children, and many of the mental defectives that we see are due to hereditary factors rather than to environmental factors. Thus, if two imbeciles marry, in the majority of cases all of their children will be imbeciles. Again, we all know how melancholia and mania tend to run in families; there is no doubt that the tendency to the manic-depressive psychosis can be inherited. Epilepsy is an exquisitely hereditary disease. I am not sure but that the tendency to some forms of delinquency may be inheritable.

The environment, it must be remembered, however, affects not only the ill-born, but also the well-born. At this meeting today we are more directly interested in the study of environment (1) on the physical side, (2) on the psychic side and (3) on the social side.

On the physical side the importance of properly nourishing children, housing them, clothing them, resting them, exercising them, protecting them from infection, are all obvious to every one—to the laity as well as to physicians. On the psychic and social sides, however, people are not fully awake, I believe, to the importance of the problems that confront them, though they are becoming awakened by meetings of the kind we are now attending.

On the psychic and social sides of the development of the child the family and the servants in the family come first into consideration. Then come, I think, the neighbors, the neighboring children especially; then the school, then the church and other associations into which the child enters. Then there are books, plays, moving-picture shows, theatres and things of that sort to be borne in mind. I put the family first because I believe that is the most important factor, and it is in its influence that most mistakes, perhaps, are made, and in it much can be done to improve conditions.

The study of the normal family becomes ever more interesting to sociologists and to social workers. I do not know how many of you have read the recent article by Margaret F. Byington on this subject, but it is a valuable and readable paper. Any of you who haven't read it would, I feel sure, enjoy looking over it. In it she points out how in recent times the conditions of the family have changed, especially regarding the economic coöperation of the family. Formerly, every member of the family had to be coöperative in the family as an economic unit, but now the economic side is less prominent and the main characteristics of the environmental influence of the normal family are cultural, educative and disciplinary. In my own opinion the family is the chief place for the cultivation of adequate personal expression, for teaching the proper control of impulses and for favoring the growth of the higher sentiments and ideals. It is the place for the organization of the primitive instincts into higher psychic units. It is, and should be, the family in which the child becomes initiated by example, by precept and by opportunity into the social life of his time.

Now, in the family, both the mothering and the fathering are important. Let an institution do what it will, be it as good as this* is, there is something that comes from the emotional side of family life that is impossible to get in an institution where the children are not in contact with and under the influence of their fathers and mothers. This contact and this influence are not replaceable, so the family is a better place to grow up in than an institution, *provided the family is a normal family*. But when the family is abnormal, then it may be important, and often is very important, to transfer the child to an institution.

The habits of the child, the interests of the child and the ideals of the child, are gradually developed in the normal family. There may have to be sometimes a little physical punishment very early. In a normal family I should think that perhaps one salutary spanking was enough. I have observed instances in which one spanking during the first two years—not afterwards—was administered and seemed helpful. With a normal child, after that one spanking has been given, it is rarely necessary, provided there be consistency and good sense in the management on the part of the father and mother, to resort to further physical punishment. Rewards and punishments of other sorts, especially judicious praise and very occasionally pedagogic blame, are useful as agents to modify a child's behavior.

The child's allowance chart† is a helpful means, I believe, in making the child learn to govern itself. After a child reaches the age of six or eight it is often irksome to the parents to be saying, and hard on the child to be hearing, "don't do so and so." In the allowance chart there is a list of twelve or fifteen things that the child needs to pay attention to, for instance, getting down to breakfast on time, having its hands washed before dinner, observing punctually the study periods, and keeping its desk in order; there are a number of little things that every mother has to make sure that the child does. In the allowance chart the child is allowed a certain number of marks for each one of these duties faithfully performed during each day. At the end of the week, if the child's allowance is 25 cents per week, and he has got only 50 per cent of the marks that are given for full performance of his tasks faithfully, he will receive only 12½ cents. I have seen this tried in a number of families with remarkably good results. The children keep the chart themselves and thus learn to govern themselves. They have to be children of the better sort, perhaps, to do this, but the use of this method often relieves the father and mother of much detail of personal supervision. After a child has kept such a chart for a few months it can often be dispensed with. The children I have observed have been honest and conscientious in recording their marks.

A word as to caprices of children regarding diet. As a practitioner of medicine I have found that no small part of the troubles of patients about eating in later life date back to the mistakes of childhood training, when parents permitted caprice. Parents should know what is a good diet for the child, should place the food before him and should see that he eats it. Parents are often responsible by being capricious about food themselves. A parent's bad example may be very harmful to the child. Parents should set the example of eating all kinds of simple foods regardless of choice, and no child's likes and dislikes in regard to diet, except in rare instances of undoubted idiosyncrasy, should be very much heeded.

And now a word as to regular bathing. Many children hate to take a bath, but if the parents bathe daily themselves, and teach their children in early life to bathe daily as a regular habit, these children as they grow up look upon the daily bath as a most natural habit, and expect nothing else. The same applies to exercise and to proper dress. The child should have regular hours for exercise in the open air and the parents should make proper provisions for this and make sure that it is made enjoyable. Children should also have regular supplies of simple, sensible, clean, attractive clothing, and should be required to wear what is supplied.

The general physical and psychic hardening of children is another important matter. Many children, especially nervous children, are oversensitive. Much can be done to help by a judicious hardening process. Common sense, of course, is necessary, for it is harmful to take a child that is oversensitive and to be too hard with it. Parents, especially among the well-to-do, are prone to err on the side of indulgence rather than on the side of overhardship. They are often not firm enough with children with regard to the maintenance of a normal routine, allowing their children to break through it too easily. When parents are in doubt as to the course they should pursue they should seek the advice of the family physician.

In educating the children to self-control, and especially to control of temper, parents can do a great deal. Many parents allow children to give way to emotional outbreaks. If a child cries for something hard enough the foolish parent will often give it what it wants. This is, of course, a disastrous policy to pursue. I once knew a girl in a large American city who boasted that she could make her father give her a Packard automobile just by going into a tantrum, and she did. She had found out that she could get anything she wanted if she made enough fuss about it. Rewarding emotional outbreaks in such a way is very injurious to a child. A child should be taught that it can more often secure things that it desires by controlling itself, than by losing control. It is self-control that should be rewarded, not the evidences of lack of control.

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* The New York State Training School for Girls (at Hudson, N. Y.), in which the Symposium was held.

† Obtainable from Rowland and Ives, 225 Fifth Avenue, New York City.

If a little child, for instance, crying because it wants something very much be taught to stop crying, and to say "please, may I have that?" before it is permitted to have it, it will learn that self-control, rather than the lack of control, has brought the reward.

Consistency in policy and attitude on the part of the parents is essential if a child is not to be misled and confused. How often one hears a mother tell a child to do something, and then observes that this mother's own attention becomes distracted, so that she allows the child to do something else, to the neglect of carrying out the order given. If in early childhood an order be once given, one should see to it not only that it is obeyed, but also that there is prompt obedience. Again, a mother should not follow one policy one day and another the next. Such inconsistency can be very harmful to the developing child. For the same reason, the father and mother should agree on the course to be followed and should make sure that they support one another in it. If you are going to develop any stability in your child you must be consistent in the demands you make of it.

Then comes the example of cheerfulness and of good-will. Parents who give way to their own depression before children may do them a vast deal of harm. Parents who indulge in fault-finding, and who impugn the motives of others before children, set a bad example. Parents who indulge in personal gossip before their children exert an influence that may lead their children to the pernicious habit. Parents who complain of their own ills, such as their headaches, their pains and their lack of appetite, before the children, may plant the seeds of hypochondriasis in the minds of the children. A mother ought to be ashamed to admit to her child that she has a headache, for during this early period there is great danger of "psychic contagion." Much that has been attributed to heredity is really due to psychic contagion in childhood. Many people develop "habit headaches" and "habit pains," and unwillingly encourage the development, by imitation, of similar headaches or pains in their children. Everyone should learn to "consume his own smoke." We help other people to keep well if we ourselves give the impression of feeling well and cheerful. Here, if anywhere, is the place to assume a virtue if you have it not.

A child should never be permitted to use invented physical symptoms or nervous symptoms to escape from its duties. Many a child learns that he can stay at home from school, or from Sunday School, or from dancing school, by having a headache. Children, as well as grown-ups, are tempted to invent some excuse in the hope that they may escape duties or occupations that are a little unpleasant or irksome to them at the time. The wise parent should see to it when the child says he has a headache and is permitted to escape some normal function, or some duty, on account of it, that he doesn't have too good a time otherwise. Let him stay in bed on restricted diet, restricted companionship and restricted activities until the headache is better, and then if he has been fabricating his headaches he will not have them so often.

Good teamwork on the part of the parents is, as I have said, very important. Sometimes the father will undo all the mother does in the way of discipline, and sometimes the mother will undo all that the father has tried to do. Nevertheless, it is most desirable that the child grow up under the influence of two parents. The fatherless child is to be pitied, just as the motherless child is to be pitied. The disastrous effects of the prolonged absence of the father on the child are being seen now in Canada, in Great Britain and in France during this war. We are going to see something of it here in the United States if several hundred thousand fathers remain away for a long time. The effects upon the unhusbanded mother are bad enough; the effects upon the temporarily unfathered child are perhaps worse. We must prepare, too, to meet the problem of the permanently fatherless child in the reconstruction period.

The peculiar situation of an only child is worthy of special consideration. We know now that it is a very dangerous thing to be an only child. There are very real advantages when there are several children in a family, and the advantages are greatest when these several include both boys and girls, for boys and girls as playmates in the same family exert upon one another a beneficial, educative influence that can be obtained in no other circumstances. The only child, moreover, is likely to be too much with grown-ups and to be overindulged by them and by the parents. Contact with playmates outside, though very important for the only child, can never fully and satisfactorily replace contact with brothers and sisters in the same family.

The dangers of contact of young children with ignorant and unscrupulous servants cannot, in my opinion, be overestimated. In this country too many of the servants now accessible as children's nurses come from very low sources. Their ideals of family culture and of education are often wholly different from those of the families they enter. The children, if left much with such servants, get too much of their education on a low social level, instead of on the social level of their parents, to which they are entitled. More and more people seem to be willing to leave the education of their little children almost wholly to certain girls of the type mentioned. This can be only a mistake. The matter should be taken much more seriously than it is at present. Fortunately, many servants and children's nurses are excellent companions for little children. Among them are many sweet-natured, conscientious and high-minded persons that exert only a good influence upon the children. Indeed, among our newly rich I have more than once met with instances in which the influences of servants and nurses were more wholesome than those emanating from the parents!

Every parent should know what children his own child plays with, who they are, from what sources they come, how long the children are together and where and how they are supervised when they are at play. The reasons are obvious.

The timely sex instruction of the child should of course come from the parents or from the school. Most of it, I think, should come from the parents. It is exceedingly desirable that one of the parents at least, preferably both of them, should retain the full confidence of the child, keeping in sympathetic communication with it as it develops, so that when curiosity regarding child-birth, parenthood or the sex-relationship arises in the child's mind the child will go to one or the other parent and have its curiosity satisfied by an explanation that is a true one, but suited to the age of the child at the time. Good judgment is necessary in deciding how far to go in explaining such things to children, but if the child's curiosity, when it has been aroused, be sufficiently satisfied with simple, suitable, honest statements by some one in whom it has confidence, all sorts of grave difficulties may be avoided. I would re-emphasize the fact that a sympathetic relationship between the children and the parents is essential. Many children who become erratic and delinquent do so because they didn't have any one in whom they could at certain important times properly confide. Fathers and mothers too often fail to realize the importance of this. They should try to recall their own perplexities of childhood, when they wanted to know things about which they dared not ask their fathers or their mothers. The relationship between the child and its parents should, if possible, be so maintained that the child will ask spontaneously for information on the subjects under discussion, without any conscious effort on the part of the mother and father to influence it to do so. Confidential inquiries of that sort, if sympathetically and wisely responded to by parents, would save the children in many instances from injurious misinformation and sometimes from serious trouble. Children thus parented would not need surreptitiously to seek sex instruction from boys and girls in the neighborhood with whom they happened to be thrown in contact, or from servants. Moreover, if such children, as is often unavoidable, imbibe untimely or erroneous sex-information from the extra-familial environment, they would take this at once to their parents, by whom any false ideas could be quickly corrected and through whom avoidance of undesirable contact would be arranged.

Another difficulty in the rearing of children that ought to be emphasized, I believe, is the over-attachment that sometimes is permitted to develop between fathers and their daughters and between mothers and their sons. The child's need of affection can, and should be, reasonably gratified by parents without exposing it to the dangers of overtenderness and without, as it grows older, protecting it so completely from the rough places of the world that it shrinks from facing the realities of life and tends to nestle snugly in an infantile paradise. Abnormal attachments between children and their parents are by no means uncommon. The psychoanalysts have laid a great deal of emphasis on these pathological relationships, and I think the subject should be ventilated. Whereas, normally, there should be deep and genuine affection mutually felt and exhibited, great care should be taken that it should not exceed normal limits and interfere with the later life of the child. There should be no cultivation of, or indulgence in, overfondness and overaffection, especially between mothers and sons and fathers and daughters, for very often a fixation of the affections on the parent occurs that prevents the normal emancipation of adulthood. One of the things that parents must willingly learn to do is to consent to the setting of their children gradually free from themselves. The time comes for every developing personality when it should be released by its parents from all legal, social, intellectual and moral restraints, when, in homely words, the tub is not only permitted, but is required, to stand on its own bottom.

It is highly desirable that the affection of children for their parents should be strong and close in early childhood, at the time when the authority of the parents over the children is supreme, but the child should be gladly and relatively quickly taught by the parents to spread its affections over others in and outside the family, and should be shown how gradually to gain its independence from both the father and mother. A boy should never be tied too long to his mother's apron-strings, and a girl should never be so fond of her father that she can't fall in love with the proper man and go with him to live when the proper time for this comes. Many lives are being ruined, in my opinion, every day by this overfixation of affection—this overattachment of older children and adults to their parents. Surely none will misunderstand me here. I am not praising Goneril and Regan, and I admire Cordelia, whose love for her father was richer than her tongue, but even she left her father to marry a worthy husband.

A father should be careful not to carry his authority over a boy too long or make his rule of his boy too rigid, or the boy may develop a hatred for his father that may lead to all sorts of difficulties with father-substitutes later on. Thus, the boy may later transfer the hatred of his father to his teacher, or to any other father-substitute with whom he comes in contact, either in boyhood or in society in later life. It is believed by psychoanalysts that the world's quota of anarchists and fiercer revolutionists is largely contributed to by father-haters, that, indeed, their manifestations are in reality merely disguises of father-enmity. However this may be it would seem certain that much harm can come from over-rigid treatment of a boy by his father. The father's full authority should be exerted only in very early childhood, when it is necessary to teach the boy to control the primitive impulses as the sentiments are being gradually developed by example, by precept and by contact with the social environment. The father and mother should not try to keep such full control of their children long, and they should face the prospect of giving up all control after a certain time. And at no time should more compulsion of children be resorted to than is absolutely necessary for the formation of normal, healthy habits.

A child should never be made to feel inferior; for a feeling of inferiority may do a vast deal of harm. Even if a child be subnormal, it is important to try to protect it from feelings of inferiority. Thus, if possible, a subnormal child should be kept from coming into conscious competition with normal children. When a physical defect of any kind is present, for example, a residual shortening of a leg from poliomyelitis, a facial paralysis or a spinal curvature, an effort to convince the child of the possibility of counterbalancing advantages should be made.

I have heard of a mother who always spoke of her little girl as an "ugly duckling." The child was not particularly handsome, but she was a good and attractive child. The mother, for some reason, was ashamed of that child, and gave expression to her shame always in front of other people. She would say, "there is my ugly duckling; what shall we ever do with her?" Sometimes she would remark, "she will never marry—that ugly duckling." Think of the discouraging influence of such comments upon the child!

During adolescence the child should be encouraged to face the real situations of life when confronted with them, and should be kept from turning away from them, or denying their existence, or finding sufficient satisfaction in the wish-fulfillments of day-dreaming and phantasms. The so-called "avtistic-thinking," which avoids reality and which indulges in pleasurable emotional states at the expense of wholesome objective activity, is to be recognized when it exists, and any excess of it is to be combatted, not directly by the prohibition of the pleasure-seeking automatism, but, rather, indirectly by sympathetic guidance in the processes of "reality-thinking" and by the encouragement of objective activities that compel plungings in the cold waters of actuality, that force swimming to avoid sinking, thus educating to self-reliance.

The problem of avoiding the spoiling of the child is then a large one. It involves biological, medical, psychological and social considerations. Heredity and environment are equally important. In the latter, along with strength of body, the chief stress is to be laid upon adequate provision for the organization of the mental life. Instinctive tendencies must have proper opportunity for expression; there must be education to sufficient self-control; attention must be given to the growth of the sentiments; the child must have opportunities to live out its fundamental traits, while at the same time it is subjected to the influences of the social surroundings and the ideals that will lead to the higher planes of conduct; and, finally, it must secure full emancipation from family, teachers and even friends, gnawing with its teeth, if necessary, its bonds asunder to gain its freedom. When we can see our way clear to such provisions we shall have learned how to avoid "spoiling the child."

Discussion.

Mr. E. B. Hilliard, Berkshire Industrial Farm, Canaan: The need, as was expressed by Dr. Healy, of a thorough study of the individual and the causative factors of his career has just been shown to us. Having had several experiences of our own at Berkshire Industrial Farm, which is a home for delinquent boys, we found the futility of bringing the troublesome boy into line without first understanding his case.

A year ago our Board of Directors decided to secure a specialist in mental and nervous diseases, who should make a complete physical, etiological and psychological examination of the inmates.

For this purpose Dr. McCord, Health Director of the schools in Albany, was employed as consulting psychopathologist. One hundred boys received complete physical and etiological examinations, including the testing of the blood by Wassermann reaction and psychological examination in reference to the intelligence of the boys.

While it is early to decide the exact value from an educational and reformative standpoint, it is certain to be a great help to us.

Quoting from Dr. McCord in his report to us: "The very large percent of crime and delinquency is preventable, and in the next decade society will direct its welfare agencies toward a more complete measure of prevention instead of the inadequate curative measures now being applied in the civilized communities."

I should like to emphasize the point of view of the institution. I think we have seen the need of good diagnosis. But are we going hand in hand? Do we get the same amount of scientific knowledge on the treatment as we get in this scientific diagnosis? Herein comes the need of the individual study. We have heard about the need of the individual study, but we must also have the individual treatment. If we do not have that our work in institutions is wasted.

Science is revealing the right approach to the reform of troublesome boys by following the most rational method of diagnosis with the most rational procedure of treatment. Here we leave science for art, for the teacher or reformer can depend by no means upon what he knows about his subject; he must know how the problem stands with the individual.

The amount of alterability, as Dr. Healy said once, in the whole situation is plainly enough the sum total of the alterability of the individuals concerned.

Then it follows that if the needs and possibilities of these individuals are extremely various, greatly varying methods of meeting those needs and developing those possibilities must be inaugurated if the full amount of modification of the situation is to be realized.

To deal thus with the individual calls for a true educator, men and women of the finest, broadest type, possessing experience and ability. The ordinary kind of teacher will not suffice. What we need is the educator who has his mind open and active, ready to observe peculiarities and to deal with them. Such educators are hard to find. We need big hearts and trained, broad minds to deal with the most difficult problems of education, men and women who can enter fully and with enthusiasm into every phase of a boy's life. We need persons of broad experience and rare tact, leaders in spiritual life.

If the physical needs of the boys are properly treated they yield quickly and naturally to a beautiful reformation. One motherly, refined woman of good resourcefulness and broad mind can work wonders to bring order out of chaos among a group of bad boys, and she can do it, too, with modest equipment. Such a person never forgets the individual, and it is with the individual that reform education is concerned.

Let us continue the splendid steps toward rational methods of diagnosis and send out the call for men and women of heart and mind, trained to deal with the individual.

Dr. Charles Bernstein, Rome: Three or four very strong points have been brought out regarding this situation of these very peculiar cases we have heard so well illustrated and brought out by Dr. Healey, and in the particularly fine analysis of behavior reaction as outlined by Dr. Barker. We are very glad to know where we can take the case and have it analyzed physiologically, if you will, by Dr. Barker and psychologically by Dr. Healy. Only a few of us can hope to have the benefit of this very exhaustive research work.

Dr. Barker's physiological analysis would be worth a great deal to the boy and girl in the poor family. Few will be able to avail themselves of such expert advice, and many will be so far gone that we won't be able to help them, because they were not reached in time. While it is the foundation of all we know, can't we do something practical right now for all?

Dr. Healy brought out the point of hard physical labor. It is wonderful; it will accomplish results. We hear so many of the sentimentalists say, "Oh, you are exploiting the feebleminded by working them so hard." I always say I want to see the man or woman who has the patience to overwork the feeble boy or girl.

When these girls and boys are passing through the age of sex development, from fourteen to eighteen years, we can expect all sorts of habit reactions from the earlier experiences they have had in life, in their families and surroundings. Many of them have lived in tenement houses, in one room, where they actually saw the sex act performed in their presence. What regard for or repugnance can they have for it? We can and must get them away from such family environment. If society is going to encourage a larger birth rate then it is due from society to take proper care of these children. We must take these boys and girls away from such abnormal experiences and environments and must stabilize them over this period.

Many of them don't know what this period means, and only get the worst information available. It means a great deal to these boys and girls to help them analyze the situation. I don't know whether you call it psychic analysis or not, but we know that in some way we can take these boys and girls and talk to them about their life experiences and the troubles they have had, and even though they are feebleminded it does seem to help some to carry them over and stabilize them over this very vulnerable period.

I had an opportunity to observe recently how ill-informed the magistrates are. I attended a meeting of the magistrates in Buffalo about six weeks ago, and they were all bemoaning the fact that they had no department of psychology to which to refer their cases. We have a law in New York today which allows practically anybody to pick up any person who is abnormal, or who is a delinquent, and if there is any question regarding their mentality they can send them to Rome as a voluntary case, and we keep them there for a few weeks or months. We are glad to take those cases from any of you physicians. You need not worry about how you are going to get them to us. If you find any of these doubtful cases merely ask us about it.

Dr. William Healy, Boston, Mass.: I agree absolutely with what Dr. Barker has said. Indeed, we should all like very much to have tests, if we can have them, for gauging the ability of the individual to control emotions. Some psychologists have promised us that some day there will be something of that sort. I know of one man who is working very hard on that problem just now.

One point in the situation is the fact that those who have to do with the feebleminded have laid down their definitions of feeblemindedness. The American Association for the Study of the Feebleminded has given us criteria which we are, fortunately or unfortunately, obliged to go by, if we are going to speak of feeblemindedness in terms that may be generally understood. For instance, they have stated that the feebleminded person is one who cannot pass age-level, so-called intelligence tests up to twelve years. I don't say that I exactly agree to this exact definition, but we have to start out from somewhere, and we have to have something as well-defined as possible if our discussion is to lead anywhere. Ultimately we shall have to have recognition of the larger sphere of the mind and of mental control of the emotions as part and parcel of what goes to make the normal individual.

Dr. Lewellys F. Barker, Baltimore, Md.: I have nothing to add except perhaps a note on terminology. People speak of "mental deficiency." They seem to mean by that always "intellectual deficiency," or "cognitive deficiency." I think there is far too little attention paid to deficiency in feeling, or emotional deficiency, and to the deficiency in volition or conation. The feelings and the will are just as much parts of the mind as the intellect is a part of the mind, but the term "mental deficiency," as used here today, nearly always referred merely to the intellectual or cognitive side.

In my opinion, we see just as many, or more, defects on the emotional and conative side as we do on the intellectual or cognitive side.

What terms you are going to use I don't know. If you reserve the term mental deficiency for one-third of the mind and rule out the other two-thirds, you are going to overlook a lot of important defects.

These abnormalties of behavior that we have heard of today are the proof of defect. They are the evidences of affective-conative defect.

You say the patient is not feebleminded, yet you admit that the behavior is inadequate and antisocial. To me that behavior is evidence of feeblemindedness on the conative rather than on the cognitive side, though, frequently, affective-conative and cognitive defects are associated.

SYPHILIS AND THE GENERAL PRACTITIONER.*

By ALBERT T. LYTLE, M.D.

It is not my intention to attempt the impossible by trying to cover the entire subject of syphilis in a few minutes' talk, but to emphasize our responsibility in the recognition and intensive treatment of this protean disease, and if time allows, particularly to discuss some few phases of cryptic syphilis.

Syphilis has always been regarded as an infectious or contagious disease. Unlike the great majority of such diseases syphilis does not seem to be self-limited in its course, as is pneumonia, smallpox, and the like. In fact, it is still generally considered that once syphilis is acquired its cure cannot be achieved. In its chronicity, incurability and latency, syphilis must be classed with tuberculosis, cancer and leprosy. Yet, today, the positive cure of tuberculosis in its incipiency is obtainable, and its arrest in advanced states very often secured. This happy outcome in syphilis is daily becoming even more assured despite its protean character and extremely common occurrence.

While always heretofore our profession recognized the gravity and menace of syphilis, it seldom if ever recognized its own responsibility in regard to educating the people thereabout, nor did it perform its full duty in regard to bringing the hydraheaded monster into the open to its destruction. The discoveries and consequent developments of the past few years have girded up our loins, and we are now beginning to "carry on" to the ultimate eradication of the scourge of syphilis more surely than to that of tuberculosis. The scientific battle has been won, the public conscience has been aroused and the people demand to be educated. The general indifference of our profession toward the prevalence, diagnosis and treatment of syphilis is still deplorable; to this disease should be given as much consideration as is given to tuberculosis or to typhoid, for it involves not merely the health, the life and the efficiency of the individual, but to a much greater degree the happiness of the family and the welfare of society.

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* President's Address at the Annual Meeting of the Eighth District Branch of the Medical Society of the State of New York, at Buffalo, September 4, 1918.

Because syphilis is not the glaringly conspicuous picture in our daily life that leprosy was in Biblical times, the public wonders why so much fuss is being made about it. Conviction seems to demand that the damaged goods be seen; the public feels it must be shown the scarring, the festering, the maiming, the halting, the deafness, the blindness, the insanity, the incapacity, before it will believe and act. It is our manifest duty to make the exhibit that the end may be hastened. We must make it understood that most syphilitics are socially presentable during nearly all of their lives following the "catching" of the disease; that syphilis is most frequently acquired in adolescence and early adult life; that the greatest irrevocable damage from syphilis asserts itself between the ages of 40 and 60, and that probably one adult male in ten and one adult female in twenty of the present population of the United States are being destroyed by this preventable and curable disease.

Strange as it may seem, it is fairly conclusively proven that syphilis is a product of the Americas, that it was introduced into Europe from Hayti by Columbus in 1492, and that our civilization later brought it from Europe.

Notwithstanding the wide clinical knowledge possessed by our profession, the solution of the problem of syphilis was left until the beginning of the twentieth century, nearly 500 years after the discovery of America. In 1903 two Frenchmen, Metchnikoff and Roux, demonstrated the transmissibility of syphilis to monkeys, thereby opening wide the door for the discoveries which have followed in such rapid succession. To them must be accorded the honor and fame of having solved the problem of "the third great plague." In 1905 Schaudinn and Hoffman proved that the spirochæta pallida is the causative factor; as such it has stood against the claims of 272 other organisms; and it now rests upon as sure a foundation as does the tubercle bacillus. In 1906 Wassermann, with others, published the details of the now universally used serum reaction for the detection of syphilis in the sera of man—the well-known Wassermann reaction. In 1906 Metchnikoff and Roux published their prophylactic treatment. In 1910 Ehrlich startled the world by the publication of a "specific" for the cure of syphilis which he called "606," or salvarsan. The profession, without its usual conservatism, improperly credited this remedy with curative powers it does not possess, for it is far from being a "specific." A cure may follow a single dose; it may require many administrations; or it may not be secured at all. In 1911 Noguchi demonstrated that intradermic inoculation of the extract of killed cultures of the spirochæta pallida give rise to specific reaction, especially in latent and hereditary syphilis comparable to that of tuberculin in cases of tuberculosis. Thus in the short space of eight years after Metchnikoff pried open the door behind which the life of this disease had remained mysteriously hidden for centuries, syphilis was proven to be subject to those laws that govern all germ-caused disease and to be more easily diagnosed and successfully treated than many of its similars.

The past seven years have seen a gradual change of attitude toward this disease on the part of both the public and the physician. It is being considered less and less of a strictly social and more and more of a strictly medical problem—one of public health rather than of public morals. The great incidence of venereal diseases in the recruits of the national army, as compared to their incidence in the soldiers of the regular army, astounded the public, and it is awakening our professional conscience to its shortcomings in the handling of these medical problems of civil life, to a sane desire properly to fill its mission in regard to their solution.

Until very recently it was taught that syphilis was primary, secondary, tertiary, para or hereditary. These names were thought to cover more or less radically different manifestations of the disease. Now such consideration is undergoing a complete change, and syphilis is said to be active or latent, manifest or cryptic—each state depending upon the condition of the soil, the virility of the seed and the quantity planted, just as in any other infectious disease. Syphilis shows a varying predilection for the different human tissues, and it is ever ready to blossom into characteristic symptoms whenever the conditions are favorable. And yet notwithstanding the persistence and activity of the spirochæta pallida, once it is implanted in a favorable site, probably no other germ attacking mankind is so readily and so quickly destroyed. Unlike most other pathogenic organisms, it does not excite intense resentment on the part of the invaded tissues and either promptly destroy or become destroyed; rather, it acts like the German peaceful invasion of a friendly nation, which surely destroys the invaded unless efficiently combatted at the very outset.

The most vitally important period in the history of an attack of syphilis, the one fraught with the greatest possibility for an absolute cure, is that formally known as the primary stage. This phase of the disease includes the invasion, the incubation period, the appearance of the chancre at the site of the invasion, and probably the development of the stellate adenopathy just adjacent to the primary sore. A diagnosis made early in this stage—a diagnosis which only can be made with the aid of the microscope—and the immediate institution of intensive treatment will determine an absolute cure in a very few days or weeks.

Every physician should view with suspicion any hard pimple or kernel that is indolent, no matter where situated. It is not necessary that such a chancre should become an open ulcer in order to make the diagnosis positive. No physician should make the mistake of dismissing the presence of syphilis because a suspicious sore does not conform to the classic description of a typical hard chancre. The primary sore may be a typical chancroid; "hard" and "soft" are no longer pathognomonic terms. The chancre may be a mere scratch or an abrasion; it may be painful as well as painless, or there may be no chancre or sore. In particular, every genital lesion that appears in from a few days to many weeks after a known exposure to possible syphilitic infection should be kept under close surveillance until all possibility of its being syphilitic has passed. It is extremely unwise to treat such suspicious lesions by curative or antiseptic methods; only simple cleanliness should be used until a correct diagnosis has been made. At this stage is the golden opportunity for successful treatment, which never should be lost. It is our duty as physicians to deeply impress this important truth upon the minds of the ignorant and inexperienced. While all the foregoing is true it must not be forgotten that the skin and mucous membrane, as well as the so-called tertiary, manifestations may present themselves before the chancre has fairly disappeared, and so prove that the entire organism has been invaded and that the disease has become systemic and general. Judicious haste in the diagnosis is therefore vitally essential in order to institute treatment early, for up to the appearance of the stellate adenopathy syphilis probably is a simple local affair. It must also be remembered that the port of entry in many cases is not in the genital field; such extra-genital occurrence is a powerful reason for considering syphilis a medical and not a moral issue. It behooves us then not to meet the anxious and frightened boy or girl who consults regarding a trivial-looking sore, with ribald jest or cruel indifference, but always with that dignity and friendly sympathy and concern for which our profession is esteemed.

Usually from a few days to a few months following the primary lesion, early syphilis, the so-called secondary stage, is ushered in by the appearance of the skin and mucous membrane manifestations. If not before, then at this time the local disease has become a general one and the entire body is teeming with spirochæta pallida; to use military expressions, the "great drive" is on, following the preceding period of "filtering through" the defenses. This stage is the acme or fastigium of the disease. At this time the Wassermann and luetin tests begin to have ever-increasing diagnostic value.

The general concensus of opinion is that the Wassermann reaction is the most valuable test known for the diagnosis of syphilis. It is practically pathognomic when positive; the only other diseased conditions giving a positive Wassermann reaction are some forms of malaria in the febrile stage, the yaws which is caused by a spirochæta, occasional forms of relapsing fever also due to a spirochæta, occasionally leprosy, and diabetes in a condition of acidosis; recent views indicate that the diabetes are due to syphilis. There are certain factors that influence the accuracy and reliability of this test; summed up they are alcohol, the growth of bacteria accidentally introduced into the collected specimen of blood to be examined, and the natural variation in the amount of inhibiting substances in the patients serum in vivo. The ingestion of alcohol within at least 24 hours of the collection of the blood for the test is sure to produce greater or less negative results in an otherwise positive producing serum; the amount or kind of beverage containing the alcohol does not make any difference. The presence of certain bacteria accidentally introduced into the blood to be tested may cause a positive reaction in an otherwise negative serum; hence, strict aseptic care should be taken in collecting specimens of blood for this examination. Owing to the natural variations in quantity and activity of the inhibiting substances present in the patient's serum in vivo no two samples are necessarily alike; hence a single negative test has little if any value either for diagnosis or for the determination of a cure. Another thing to remember is the deleterious influence upon the blood specimen due to its shipment over long distances by mail or otherwise; changes are very liable to occur which cause a positive serum to give a negative reaction and *vice versa*. Specimens should be immediately sent or taken to the nearest laboratory in the shortest possible time, with the least possible agitation and subject to little or no temperature variations.

Even during the second phase, with the disease a general one, if a prompt installation of intensive treatment be instituted the individual in all probability will be cured. The old idea that awaiting the onset of the secondaries is good medical diagnostic tactics must be abandoned, and the prompt and repeated use of the modern laboratory methods substituted, so that the diseased individual not only may be speedily cured, but also of equal if not greater importance, be prevented from innocently becoming a menace to others. The sore mouth, with the abundant saliva swarming with spirochæta pallida, is without doubt the source of infection in greater percentage in those cases found harboring syphilis than present statistics show. The presence of active syphilitic mucous membrane lesions in the mouth is the source of infection in thousands who have been guilty of no infraction of the moral law, and who are the innocent but dangerous victims of a prudery which is rapidly becoming a thing of the past. Another grave mistake in awaiting the appearance of the secondaries is shown in the fact that the rashes, cankers, falling hair, persistent sore throat and other signs all too frequently do not become manifest; or else show in so slight or so transitory a form as to be entirely missed. In which events a negative diagnosis is made and the invaded individual is lulled into a false sense of security because his disease is diagnosed as something else. What a monumental responsibility rests upon our profession from the occurrence of this one disease!

When syphilis has arrived at this second stage in its progress in woman, she, in addition, becomes a menace to her possible offspring. From now on, while the disease exists in her body, particularly in an active state, if she become pregnant, her child in utero is infected with the spirochæta pallida and acquires syphilis as surely as the living human being acquires it—the child if born alive has hereditary syphilis. The difference between the heriditary. the congenital and the acquired forms of this disease being the port of entry and the method of implantation.

The second phase of an attack of syphilis after a time subsides and the victim becomes non-contagious. The time period of continuous infectiousness in untreated cases is on the average from three to five years, although the recrudescence of visible manifestations may make the syphilitic infectious at any time. Up to the end of the second phase the syphilitic shows little of the ravages of the disease and suffers little discomfort; but with the onset of the third phase or tertiary stage, Hun-like destruction stalks through the body, crippling and maiming, producing hideousness, inefficiency and wanton destruction from gumma and from scar tissue formation until death ends the conflict.

While frequently the manifestations of the second stage clear up spontaneously, more often such result follows slight and insufficient treatment. The deluded victim fooled by this will-o'-the-wisp condition considers himself cured and goes blindly on to his fate. What really happens is that the spirochæta pallida exercises a selective affinity for one or more tissues or organs and enters into a period of latency—it becomes cryptic. It may never again produce any of those external manifestations by which its existence and its activities are readily recognized. Syphilis, however, when internal or cryptic does not stop its destructive activity. The damage which now takes place, except in very slight degree, is absolutely irreparable. Cryptic syphilis does not hurry about its labors, but it is horribly efficient and certain in producing its results. While to a trained observer the evidences of syphilitic decay are easily recognized, to the uninformed the finish comes out of the clear sky, in the midday of life, in the height of accomplishment, when a feeling of security and comfort is uppermost. Deaths from cryptic syphilis are all the time laid at the door of such other conditions as nephritis, arterio-sclerosis, cardiopathy, spinal cord disease, paralysis, apoplexy, softening of the brain, insanity, idiocy, imbecility and the like. Listen to what Dr. L. F. Barker, of Johns Hopkins, says in December, 1916: "There is less excuse than formerly for mistakes in diagnosis in connection with syphilitic diseases." . . . "And yet it is of concern—that—*the disease is found* still often going on for years unrecognized and unsuspected even in patients who are more or less under close medical observation." . . . "Therefore, it is incumbent—vigorously to lay stress on the dangers of such diagnostic oversight—pressingly to urge—first, to keep in mind the extraordinary prevalence of syphilis, and, secondly, to familiarize *oneself* with and to apply the sero-diagnostic, cyto-diagnostic and roentgeno-diagnostic procedures that, supplementing the ordinary physical methods of examination make it, as a rule, easy to say positively whether or not a patient has, or has not, a syphilitic infection." (Italics, author's.)

While cryptic syphilis may be more active in some one organ or tissue of the body than in any of the others, while it has a way of disturbing one function now and another at a different time, there is one system which it invariably assails and that is the circulatory system, although even here it varies in the effects produced. Any abnormal condition of the heart and blood-vessels which cannot indisputably and directly be traced to other causes, should arouse the suspicion that syphilis is the etiologic factor. Cryptic syphilis is one of the most important producers of arterio-sclerosis, of aortic insufficiency, of aortitis, of angina pectoris and of aneurysm, especially in persons under 35 years. The finding of any of these states in patients should be a good reason for making a blood serum test.

Because the septum of the heart is a favorite place for cryptic syphilis to lodge, the occurrence of cardiac irregularities, especially of heart block and the Stokes-Adams syndrome, should more than excite suspicion, and the presence or absence of syphilis be determined. Arterial hypertension, or high blood-pressure, particularly if the diastolic and pulse pressures are high, if nephritis can be ruled out, and if the patient is not over 50 years, should arouse the suspicion that syphilis is the reason for it, and the Wassermann test made to determine. Every physician is well aware of the handicap and the danger not only to the individual but to the enterprise in which the victim is embarked from the development of such circulatory changes in that period of life during which the greatest stresses and strains are operative. Early diagnosis and the institution and continuation of inhibiting treatment are the only means of conserving the efficiency and the usefulness of the people so afflicted.

Another system which is very prone to offer asylum to the spirochæta pallida in its cryptic existence is the nervous system. The possible invasion of the nervous system is the greatest danger that menaces persons infected with syphilis. The symptoms vary according to the locality involved. If it be the brain, psychical phenomena, disturbances of the special senses and motor paralysis predominate. If it be the cord, motor and sensory irregularities and vegetative function disturbances are demonstrative.

If the base of the brain is the area implicated either as an arteritis or a meningitis the cerebral nerves are included and so cause perturbation of the special senses, particularly of the motion and function of the eye. If the convexity is the area invaded, focal cortical symptoms supervene, such as palsies, paralyses and Jacksonian epilepsy. When the virus produces atrophic and degenerative changes in the brain substance, that most subtle and dreaded condition, paresis, is present, in degree according to the amount of the encephalitis. Its progress to dribbling imbecility and death is certain. Such dreadful termination can only be held back for a little time by treatment.

Pupillary irregularities, visual defects due to optic nerve atrophy, eye muscle paralyses, eyelid ptoses, transient aphasia, slight mental confusion, undue irritability, muscle incoordination—if any of these take place in the years 35 to 50, irrespective of a negative history, they cause more than a grave suspicion that cryptic syphilis is present; such signs call for spinal fluid tests, and if the tests are found positive, demand the institution of appropriate treatment in the hope of preventing complete disaster. The damage already done is irreparable; even classic treatment is helpless, as the constantly increasing population of our insane asylums only too loudly proclaims.

If the cord is the area specially involved, as either an arteritis or a myelitis, paralyses, pains, muscle incoordination, atrophies and anesthesias occur, affecting somatic regions according to the cord areas immediately implicated. Locomotor ataxia comes to the front with all its horrible pains and crippling of gait and movements to give the patient no moment of relief. The reflexes of the tendo-achilles are lost early, even before the classic patellar reflexes. Pupillary irregularities, optic atrophy, impaired hearing, stumbling in walking in the dark, are frequently early signs of tabes dorsalis. When these signs are found, no matter what the history, the presence or absence of syphilis should be determined even by repeated spinal punctures, and unless the spinal fluid repeatedly is found negative proper treatment should be instituted in the hope of preventing further irremediable damage.

In the hereditary form of syphilis there is also a cryptic phase, but strange to say, it seldom invades the circulatory or the nervous systems in the same manner as in the adult acquired form. Bone disease, especially of the cranium, of the long bones and of the joints; keratitis and corneal opocities; deafness and a general backwardness of development should arouse suspicion and invite investigation and treatment.

The use of modern methods of diagnosis is bringing more frequently into evidence the invasion of the pulmonary apparatus as a field for the cryptic activities of the spirochæta pallida. The hoarse voice from laryngeal involvement always has been a well-known sign of syphilis, but the known involvement of the bronchi and the parenchyma always has been considered rare. However, the literature is showing an increase in the number of cases of lung syphilis reported. Great difficulty pertains in making a differential diagnosis from pulmonary tuberculosis.

Both diseases are chronic infectious inflammations, and, therefore, are accompanied by the same ensemble of symptoms, such as malaise, run down feeling; loss of strength, endurance and weight; disturbed digestion and elimination; heightened temperature and pulse; night sweats; anemia; cough; dyspnea; laryngitis; hemoptysis; sputum. Both diseases may be present at one and the same time, and so increase the diagnostic difficulty. Syphilis preferably attacks the bronchi, causing stenosis, with a resulting bronchiectasis, while tuberculosis preferably attacks the parenchyma and creates vomicae. Syphilis selects the central areas and roots of the lungs; tuberculosis selects the margins, apices and surfaces. Syphilis is very likely to involve other organs early and at the same time; tuberculosis does so late and long after the lung involvement is in the well-advanced stage. In syphilitic sputum the tubercle bacillus is never found unless tuberculosis be present. In tubercular sputum the tubercle bacillus is ultimately discovered if frequently sought. In syphilis the circulatory system is always invaded, causing arterio-sclerosis and consequent high blood tension and pressures. In tuberculosis is found low blood tension and pressures. In syphilis the tuberculin tests are negative; in tuberculosis they are positive. In syphilis the Wassermann reaction is positive; in tuberculosis it is negative. In syphilis the X-rays show cardiac hypertrophy and aortic enlargement and abnormal pulmonary shadows at the root and in the central portions of the lungs; in tuberculosis they show a small heart, no increase in the area of the aortic stripe, while the pulmonary shadows are at the margins of the lungs.

The truly magical effect of treatment upon visible syphilitic manifestations, even if desultory and haphazard, is very frequently the means of preventing a cure because the patient considers a cure obtained. Being a typically chronic disease with a remarkable tendency to recurrence of active manifestations, and to become cryptic, syphilis requires active treatment over long periods of time; treatment should never be discontinued until after all tests frequently repeated have been negative for from one to two years. The resistance to treatment of the spirochæta pallida when in a favorable habitat, and the chronicity of syphilis should be heavily emphasized by the physician, while at the same time the victim is assured that ultimately permanent arrest, even a positive cure, of the disease will take place.

The fate of the syphilitic depends upon the early diagnosis of the infection and the intensity with which the treatment is carried out during the first six to twelve months. Persistence in the treatment should run parallel with the persistence of the Wassermann reaction. There is really only one remedy, and that remedy is mercury. Early in the primary stage it is possible to obtain a cure with one dose of the arsenic preparation, salvarsan; but even so, it is infinitely better to administer mercury for six months following the administration of five to ten doses of salvarsan.

In the secondary phase the system should be saturated with mercury both before, during and after interrupted intravenous administration of massive doses of salvarsan. After a year of practically continuous mass attacks, periods of rest may alternate with the administration of the remedies over an additional one or two years, depending upon the Wassermann findings.

To the treatment with mercury and arsenic in the tertiary phase is added iodine for its resolvent effect; thereby the pill box machine gun nests of the spirochæta pallida are broken up and it becomes amenable to the action of the other remedies.

In both the cryptic and hereditary types of syphilis mercury, arsenic and iodine are the arms with which to make the fight. Owing to the resistance of the germs in these types it becomes necessary practically to treat the patient throughout his or her entire lifetime. The successful outcome, of course, will depend upon the degree of permanent damage that has occurred before treatment is begun.

No routine outline of treatment can be made, nor should one be followed. Individualization is absolutely essential for a successful issue. However, the drugs, especially mercury, must be given up to the point of intoxication and individual toleration always following a safe system of dosage.

In March, 1915, Dr. Grover W. Wende, of the University of Buffalo, than whom none is better fitted to speak, writes: "A careful comparative analysis of tuberculosis and syphilis as sociologico-medical problems compels the assertion that syphilis has as wide a world distribution, has as great a morbidity, has, if untreated, nearly as great a mortality, has a greater destructive effect upon posterity, has produced as great an economic loss to the individual, the family and the State, and has an incomparably better prognosis as to morbidity, mortality, heredity and productiveness. Yet no question has been raised concerning the unprecedented individualization of tuberculosis. If one-half the endeavor made to prevent and to lessen the morbidity of tuberculosis; if one-half the struggle made to cure the "white plague," and if one-half the treasure spent for the segregation and improved environment of the tuberculous, were spent in an effort to stamp out the scourge of syphilis, the result would almost equal the influence of vaccination upon the occurrence of smallpox.

As private individuals and as wards of the government, the incurables from tuberculosis call for relatively little expenditure of public funds, for the fatal outcome is seldom long delayed; but on the other hand, the incurables from syphilis occupy our public institutions for many long, expensive years of life. Thus, the economic argument for a broader and better consideration of syphilis is unanswerable."

Notice

The attention of those expecting to attend the coming Annual Meeting of the State Society at Syracuse, is drawn to the importance of securing their hotel reservations as far in advance as possible, as otherwise they may find it difficult to secure the accommodations they desire.

A list of the hotels will be found on page 108 of this JOURNAL, and any other information desired can be secured by applying to Dr. Edward J. Wynkoop, Chairman Committee on Hotels, 501 James Street, Syracuse.

Legal Opinion

ON THE CONSTITUTIONALITY OF THE LAWS ON CONTROL OF HABIT FORMING DRUGS AND FILING REPORTS OF CONTAGIOUS DISEASES.

February 5, 1919.

Dr. Floyd M. Crandall, Secretary,
Medical Society of the State of New York,

My dear Doctor:

At the last meeting of the council I was requested to write an opinion as to whether or not the laws referring to the filing of reports of contagious diseases and to the control of habit-forming drugs are constitutional.

It seemed a matter of very simple investigation and application, but the more I have investigated the subject the more complex it has become.

The two laws referred to are found in the enactments of our State Legislature during the year 1918, and are known as Chapter 177 of the Laws of 1918, which I have quoted in full, and Chapter 639 of the Laws of 1918, which I have paraphrased.

Chapter 177 of the Laws of 1918, entitled "An Act to amend the Public Health Law, in relation to the reports of communicable diseases," is as follows:

"Sec. 25. Infectious and contagious or communicable diseases.

"Every local board of health and every health officer shall guard against the introduction of such infectious and contagious or communicable diseases as are designated in the sanitary code, by the exercise of proper and vigilant medical inspection and control of all persons and things infected with or exposed to such diseases, and provide suitable places for the treatment and care of sick persons who cannot otherwise be provided for. They may, subject to the provisions of the sanitary code, prohibit and prevent all intercourse and communication with or use of infected premises, places and things, and require, and if necessary provide, the means for the thorough purification and cleansing of the same before general intercourse with the same or use thereof shall be allowed. *Every physician shall immediately give notice of every case of infectious and contagious or communicable disease* required by the State Department of Health to be reported to it, to the health officer of the city, town or village where such disease occurs, and no physician being in attendance on such case, it shall be the duty of the superintendent or other officer of an institution, householder, hotel or *lodging housekeeper* or *other person* where such case occurs, to give such notice. Whenever an examination for diagnosis by a laboratory or by any person other than the physician in charge of the person from whom the specimen is taken, of any specimen disclosing the existence of a case of infectious and contagious or communicable disease, *the person in charge of such laboratory* or *the person making such examination, shall immediately report* the same, together with all the facts in connection therewith, to the health officer of the city, town or village where such laboratory is situated and also to the health officer of the city, town or village from which such specimen came, and shall keep a permanent record of all the facts in connection with such examination, including the identity of the person from whom the specimen is taken and the name of the physician, if any, sending such specimen. The physician or other person giving such notice shall be entitled to the sum of twenty-five cents therefor, which shall be a charge upon and paid by the municipality where such case occurs. Every local health officer shall report to the state department of health promptly all cases of such infectious and contagious or communicable diseases, as may be required by the state department of health, and for such reporting the health officer of a village or town shall be paid by the municipality employing him, upon the certification of the state department of health, a sum not to exceed twenty cents for each case so reported. The reports of cases of tuberculosis made pursuant to the provisions of this section shall not be divulged or made public so as to disclose the identity of the persons to whom they relate, by any person; except in so far as may be authorized by the public health council. The board of health shall provide at stated intervals, a suitable supply of vaccine virus, of a quality and from a source approved by the state department of health, and during an actual epidemic of smallpox obtain fresh supplies of such virus at intervals not exceeding one week, and at all times provide thorough and safe vaccination for all persons in need of the same. If a pestilential, infectious or contagious disease exists in any county almshouse or its vicinity, and the physician thereof shall certify that such disease is likely to endanger the health of its inmates, the county superintendent of the poor may cause such inmates or any of them to be removed to such other suitable place in the county as the local board of health of the municipality where the almshouse is situated may designate, there to be maintained and provided for at the expense of the county, with all necessary medical care and attendance until they shall be safely returned to such almshouse or otherwise discharged. The health officer, commissioner of health, or boards of health of the cities of the first class shall report promptly to the state department of health all cases of smallpox, typhus and yellow fever and cholera and the facts relating thereto."

Chapter 639 of the Laws of 1918 refers solely to the use, administration, prescription and control of habit-forming drugs. This Chapter is also made a part of the Public Health Law, and is paraphrased as follows:

§ 427 outlines what acts are permitted. Subdivision 5 reads:

"Physicians. A physician may in the course of the legitimate practice in good faith of his profession and for the purpose of relieving or preventing pain or suffering on the part of a patient, or to effect a cure, administer, prescribe or dispense cocaine, or opium, or its derivatives."

Under this section the doctor may not give a prescription that contains more than five grains of cocaine, or thirty grains of opium, or six grains of codein, or four grains of morphine, or two grains of heroin. This may not be done for any purpose, or under any circumstances unless he states upon such prescription that it is not for a drug addict. He may only administer to a patient less than two grains of cocaine, or fifteen grains of opium, or three grains of codein, or two grains of morphine, or one-fourth of a grain of heroin. While in personal attendance upon a patient whom he is treating, and while absent from his office, he may not prescribe in excess of fifteen grains of opium, or three grains of codein, or two grains of morphine, or one-fourth of a grain of heroin for any purpose.

The Department of Health may by rule or regulation from time to time change or modify these regulations. These rules are a part of the law and must be observed strictly no matter what the exigencies of the case may be, nor what the judgment of the doctor is, nor what the demands of the patient require.

§ 428. Provides that a physician shall not have in his possession cocaine or opium, or its derivatives, for any other purpose than distribution by him in the lawful conduct of his business.

§ 429. Provides for the labeling of the prescription, which shall consist, among other things, of a label giving the physician's name, the name of the apothecary, and the *name of the person* for whom prescribed, and the quantity of the drug contained in the container.

§ 430. Authorizes the possession of drugs by a consumer for whom any of the drugs shall have been dispensed by an apothecary or physician, for the dispensing of which a label is required to be affixed.

§ 431. Provides for the administration of drugs by hospitals and institutions.

§ 432. Refers to private hospitals and institutions, and says that cocaine or opium, or its derivatives, shall not be administered in, nor shall any person be treated for inebriety or drug addiction in, a private hospital, or other place maintained in whole or in part for the treatment of inebriety or drug addiction, without state authority.

§ 433. Provides that no person except a dealer in surgical instruments, or a physician, or others named herein, shall have in their possession a hypodermic syringe.

§ 434. Refers to manufacturers, wholesalers, apothecaries, physicians, etc., keeping records. I believe this section should be made a part of this opinion, and is as follows:

"Each physician shall keep a record of all cocaine or opium or its derivatives purchased or received by him, which shall contain the date of each purchase or receipt, the name and address of each person from whom purchased or received, and the name and quantity of each drug purchased or received. He shall also keep a record of the gross amount of each of such drugs administered by him to patients, dispensed by him to patients while absent from his office, in personal attendance upon them, and dispensed by him to patients in quantity not exceeding lawful quantity. He shall also keep a record of each of such drugs otherwise dispensed by him, which shall contain the date when dispensed, the name and address of each person for whom dispensed, and the name and amount of each drug so dispensed. He shall as required by the commissioner make, and mail to the department a report setting forth such of the information contained in such records as the commissioner may require, together with the amount of each such drug on hand upon the date of such report."

§ 435. Provides for the confiscation of the drug.

§ 436. Has no bearing on this question.

§ 437. Should be quoted in full, as follows:

"All papers and records, information, statements, and data filed with the department (of health), or kept by any person pursuant to the provisions of this article, and all records of proceedings or actions taken by the commissioner or any of his deputies, pursuant to the provisions of this article, shall be regarded as confidential, and shall not be open to inspection by the public or any person other than the official custodian of such records, such persons as may be authorized by law or the commissioner to inspect such records, and the person duly authorized to prosecute or enforce the federal statutes or the laws of the State of New York, but then only for the purpose of such prosecution or enforcement. No employe or other person shall disclose or aid in the disclosure of such, or any part of such, papers, records, information, statements, or data, to any person not authorized by law or the commissioner to inspect the same."

§ 438. Determines that an addict is dangerous to the public health and safety.

§ 439. Provides for voluntary hospital commitment, and provides that no institution may accept as a charity patient any person applying for treatment for drug addiction, etc.

§ 440. Refers to fraudulent and deceitful acts or misrepresentations.

§ 441. Provides for the safeguarding of the blanks to be issued.

§ 442. Provides as follows:

"Any license heretofore issued to a physician and others may be revoked or suspended by the proper officer or bureau having power to issue licenses (The Regents) on proof that the doctor is an addict * * *. Whenever any physician * * * shall have been convicted of the violation of any of the provisions of this article after giving such licensee reasonable notice, his license to practice his profession may be revoked."

§443. This section refers to the violation of the provisions and constitutes such violation a misdemeanor.

§ 444. Provides for the method of negativing the complaint, and provides as to where the burden of proof shall be.

§ 445. Provides for the construction of the entire article.

The law referring to habit-forming drugs, referred to above, has omitted to describe who shall be those to demand the names and records of doctors, patients and make investigation as to the use of habit-forming drugs. No doctor can know, under the law, who is the man vested with authority to demand information. This omission presents an added subject of serious criticism of the law and increases its dangers. Where may the inquiry begin? Where may it terminate? To what ends may the inquiry be carried? Who shall be the inquisitor?

Before either of these laws became effective, the Congress of the United States enacted a law known as the "Harrison Law." This law provided for the purchase, possession, prescription and dispensing of habit-forming drugs. It advised not only the doctor who secured the drug, but the pharmacist who delivered it, just what to do. Under its provisions every fraction of a grain of morphine or other habit-forming drug was easily traceable. The law was comprehensive, complete and adequate. It is hardly necessary to quote the terms of this law, because every doctor in the state, and every pharmacist in the state, is perfectly familiar with its provisions. This law did not involve in any respect the disclosure of confidential communications, but did require every doctor to account for every particle of morphine or other habit-forming drug that he used.

The above will furnish the existing laws, and will advise you, so far as is necessary, in the administration of the conduct of your professional duties.

The question now presented to me is whether these two State laws in any respect violate any provision of our State Constitution, and that question I am asked to answer.

Under the common law, before we had any constitutional law at all, no privilege of secrecy existed between physician and patient. But in the year 1828, the Legislature of the State of New York passed a law as follows:

Laws of 1828.

§ 93. No person duly authorized to practice physics or surgery shall be allowed to disclose any information which he may have acquired in attending any patient, of a professional character, and which information was necessary to enable him to prescribe for such patient, as a physician, or to do any act for him as a surgeon."

New York State was the first of all the states to establish this prohibition.

In 1836 the Commissioners on Revision of the Statutes of New York said:

"The ground on which communications to counsel are privileged, is the supposed necessity of a full knowledge of the facts, to advise correctly, and to prepare for the proper defense or prosecution of a suit. *But surely the necessity of consulting a medical adviser,* when life itself may be in jeopardy is still stronger. And unless such consultations are privileged, men will be incidentally punished by being obliged to suffer the consequences of injury without relief from the medical art, and without conviction of any offenses. Besides in such cases, during the struggle between legal duty on the one hand and professional honor on the other, the latter, aided by a strong sense of the injustice and inhumanity of the world, will, in most cases, furnish a temptation to the perversion or concealment of truth too strong for human resistance."

In 1849 the Commissioners on Practice and Pleadings embodied this rule in the new Code of Civil Procedure, Section 170, Part IV.

In 1871 Justice Miller, in the case of Eddington vs. the Insurance Company, said:

"It is a just and useful enactment introduced to give protection to those who were in charge of physicians from the secrets disclosed to enable them properly to prescribe for diseases of the patient. To open the door to the disclosure of secrets revealed on the sick bed, or when consulting a physician, would destroy confidence between the physician and the patient and, it is easy to see, might tend very much to prevent the advantages and benefits which flow from this confidential relationship."

It is, therefore, a matter of serious consequence that the public and the medical profession should be carried back to a time prior to the enactment of this prohibition, and consider whether or not in the thousands of cases daily occurring the patient really withheld information from his doctor. Did he withhold his physical history? Or, is it true that in those earlier days, before statutory enactment, patients actually omitted or refused to disclose their physical condition, which might aid their cure? Were the public deterred from seeking medical help because their physical condition might be disclosed by their doctor in court or elsewhere? Are we advised by medical reports that patients immediately opened their personal histories, or their latent ailments, for the first time, after this statute of 1828 was enacted? It should be borne in mind that it was many years before this privilege of secrecy was universally adopted by all of the States of the Union, and I am not positive that every State has even now adopted it.

We ask the question whether a difference appears in the proper care and treatment of the sick by reason of this privilege of secrecy. Or, perchance, does it appear that the sick are quite as satisfactorily cared for whether or not the privilege to close the mouth of the attending doctor exists.

It is only fair to assume that in almost every case, except perhaps in cases of venereal disease, the patient is willing to disclose all of his symptoms and history. Indeed is it not so that in most cases, especially those in which there may be a claim for accident or injury, the patient is anxious to tell all he knows?

We must pause and think whether or not, after a careful consideration of all the theories on which this confidential privilege is reasonably based, the employment of such privilege has come to mean more than a wish on the part of the patient, or the doctor, to suppress truth which might well have been disclosed, and, if suppressed, then only because of repugnance of the medical facts.

In what class of cases, or in what medical situation this privilege of secrecy may be invoked on behalf of the patient must depend upon the facts. The information sought to have been suppressed must have been secured by the physician in the line of his treatment, or incident to an examination and treatment, which may have become necessary in order to properly care for his patient; otherwise, the prohibition of the statute cannot be invoked. *The invocation of this statute lies solely with the patient, not with the physician.* The patient may or may not invoke the prohibitive law; the doctor *may not* invoke it. If the patient wishes to invoke the statute and close the mouth of his physician, he must offer objection, otherwise the physician has a right in court to testify. Naturally enough, if the patient waives the privilege, or *asks* the physician to testify, or resorts to any of the methods of waiver which the law provides, *the doctor may tell all that he has learned.*

There is no request at this time that I discuss what constitutes a waiver, how it may be accomplished, how far-reaching it may be, nor to what legal questions or relationship it may be carried. My only thought is as to whether or not, at this day and age, any law may be passed and stand the test of righteousness and constitutionality which might interfere with a right which has been built up for nearly a hundred years and upon which the public may have come to rely with safety. And at the same time whether or not statutory enactment evolved, enacted and re-enacted for a hundred years, and upon which the public has come to rely, may be completely overthrown without notice to the patient, without notice to the profession, and without advisement as to whether or not the welfare of the public may be improved or injured. In other words, what we must consider is: May a patient, who has been protected against disclosure by statutory enactment for one hundred years, be suddenly bereft of this protection, or may his entire history be a matter of public knowledge, possibly a subject of blackmail, or may he rely upon the fact that he is protected by a law which forever closes the mouth of his medical adviser whenever he wishes to invoke the statute?

What I have said bears no relation to the police power of the municipality, commonwealth or government. If stress of circumstance warrants, any law shall be justified under such circumstances, which even temporarily makes its enforcement a safeguard for the health of the public.

No statute may be made too drastic to safeguard the public against contamination from venereal or other contagious disease. No law may be made too severe in its punishments to stop the clandestine, vicious, unwarranted and improper traffic in those drugs which tend to form dangerous habits and unfit the citizen for self support. No law may be too severe in punishing any physician who prostitutes his profession, degrades himself, or who forgets his sacred duty to his sick charge when he provides opportunity to the patient, who may have innocently enough acquired a drug habit, or who helps the addict to supply himself with his ever-increasing requirements without thought of cure. But why publish the sick man's name? Why make his personal history a matter of public record? Why make him a subject of blackmail? Who can benefit by such publication? Punish the doctor—certainly. Why confide (?) to a score of persons the name of the syphilitic or of the morphine fiend? It is wrong.

We may review the situation:

First. Originally there was no common law right providing for the privilege of secrecy between physician and patient.

Second. The first statute that referred to it in this State was in 1828, and that gave such a right.

Third. Since that time legal evolution has safeguarded, re-established, and by various statutory laws provided that sick bed secrets shall be inviolate.

Fourth. Under the protection of the various laws, built up as a bulwark, a right has been created, under which enactments the public has come to rely for protection against disclosures of a physician.

Fifth. Legal decisions have repeatedly required that a doctor must use his enlightened judgment in the care of his patient, if honestly given. The above law, referring to the treatment of drug addicts, deprives him of that right.

Sixth. The protection of silence, which has grown up under statute law, surely is violated by these two statutory provisions.

Seventh. The records provided for in both of these laws are inadequately safeguarded.

Eighth. These records becoming part of the public health record of the State are easily revealed, making blackmail easy of application.

Ninth. The "Harrison Law" (Federal) is quite adequate to completely protect the purchase, possession, prescription and administration of habit-forming drugs. None other is needful. Duplication of effort is misunderstood, oftentimes misleading.

Finally. I am convinced, though the decisions are at variance, that the statutory provisions, beginning with the laws of 1828, have surrounded the public with certain rights of secrecy in reference to their physical condition, which rights are violated by both of our State laws above referred to.

I am, therefore, forced to the conclusion that rights of citizens, established by years of statutory enactment, referring to the privilege of secrecy of facts connected with the relationship of doctor and patient, are by these two laws violated so far as they refer to this privilege, and should be completely eliminated as a part of the law, because they contravene acquired statutory rights of citizens which our State Constitution safeguards.

All of which is respectfully submitted,

JAMES TAYLOR LEWIS, *Counsel.*

Medical Society of the State of New York

17 West 43d Street, New York.
March 15, 1919.

The regular annual meeting of the Medical Society of the State of New York will be held on May 6, 1919, at 8.30 P. M., in the Auditorium of the First Baptist Church, Syracuse, N. Y.

Thomas H. Halsted, M.D., *President.*
Floyd M. Crandall, M.D., *Secretary.*

17 West 43d Street, New York.
March 15, 1919.

The regular annual meeting of the House of Delegates of the Medical Society of the State of New York will be held on May 5, 1919, at 3 P. M., in the Onondaga Hotel Ball Room, Syracuse, N. Y.

Thomas H. Halsted, M.D., *President.*
Floyd M. Crandall, M.D., *Secretary.*

113TH ANNUAL MEETING.

Tuesday, May 6th, 8.30 P. M.

Auditorium First Baptist Church.

Calling the Society to order by the President.

Address of Welcome by Dwight H. Murray, M.D., Chairman of the Committee on Arrangements.

Reading of minutes of 112th Annual Meeting, Floyd M. Crandall, M.D., Secretary.

President's Address, Thomas H. Halsted, M.D., Syracuse.

Oration, Title to be announced later, George B. Vincent, Ph.D., President, Rockefeller Foundation.

PRELIMINARY

SCIENTIFIC PROGRAM.

Arranged by the Committee on Scientific Work.

Parker Syms, M.D., Chairman, New York City.
Malcolm Sumner Woodbury, Clifton Springs.
Arthur Woodworth Booth, Elmira.
George Birney Broad, Syracuse.
H. Dawson Furniss, New York City.
James Francis McCaw, Watertown.
Frank vander Bogert, Schenectady.
William G. Bissell, Buffalo.

SECTION ON MEDICINE.

Chairman, Malcolm Sumner Woodbury, M.D., Clifton Springs.

Secretary, John Ralston Williams, M.D., Rochester.

Place of Meeting, Court House.

Tuesday, May 6th, 2.30 P. M.

Joint Meeting with Section on Eye, Ear, Nose and Throat.

Symposium on Pneumonias.

"Arthritis; Etiology, Pathology and Diagnostic Methods," David Linn Edsall, M.D., Boston, Mass (by invitation).

"Arthritis; Treatment," R. Garfield Snyder, M.D., New York.

Discussion opened by Harry Miles Imboden, M.D., New York.

"Influenza," speaker to be announced later.

"Etiology of the Pneumonias," Rufus Ivory Cole, M.D., Rockefeller Institute, New York.

"Treatment of the Pneumonias," Charles Franklin Hoover, M.D., Cleveland, Ohio (by invitation).

Discussion opened by Augustus B. Wadsworth, M.D., Albany and Oswald Theodore Avery, M.D., New York (by invitation).

"The Aural Complications," Edward Bradford Dench, M.D., New York.

Wednesday, May 7th, 9.30 A. M.

"The Present Conception of the Significance of Cardiac Phenomena," Allen Arthur Jones, M.D., Buffalo.

"Analysis of Cardiac Conditions in 66,575 Drafted Men Examined at Camp Gordon, Georgia," Major Andrew MacFarlane, M.D., Albany.

Discussion opened by William Dewey Alsever, M.D., Syracuse.

"Problems Involved in the Production of Hospital Efficiency," Sigismund S. Goldwater, M.D., New York.

Discussion opened by Mr. John G. Bowman, Director, American College of Surgeons, Chicago, Ill. (by invitation).

"A Program for the Development of Internal Medicine in New York State," Augustus B. Wadsworth, M.D., Albany.

Discussion opened by Mr. John G. Bowman, Chicago, Ill., and David Linn Edsall, M.D., Boston, Mass. (by invitation).

"A Clinical and Bacteriological Study of Fusiform Bacillus Infection," Ralph Robertson Mellon, M.D., Rochester (by invitation).

Wednesday, May 7th, 2.30 P. M.

Joint Meeting with the Section on Surgery.

Symposium on Anemias.

"Diagnostic Methods," Arthur Hawley Sanford, M.D., Mayo Clinic, Rochester, Minn. (by invitation).

"Medical Treatment," Louis Virgil Hamman, M.D., Johns Hopkins, Baltimore, Md. (by invitation).

"Surgical Treatment," Donald Church Balfour, M.D., Mayo Clinic, Rochester, Minn. (by invitation).

"Transfusion Method." Speaker to be announced later.

Discussion opened by Emanuel Libman, M.D., New York.

Thursday, May 8th, 9.30 A. M. and 2.30 P. M.

Joint Meeting with Section on Surgery.

Symposium on Reconstruction Surgery in the United States.

SECTION ON SURGERY.

Chairman, Arthur Woodward Booth, M.D., Emira.

Secretary, Claude C. Lytle, M.D., Ogdensburg.

Place of Meeting, Court House.

Tuesday, May 6th, 2.30 P. M.

Joint Meeting with Section on Obstetrics and Gynecology.

Symposium on Urology.

"Diagnosis of Renal Colic," George William Stark, M.D., Syracuse.

"Differential Diagnosis in Stricture and Calculus of the Ureter," with lantern illustrations, Guy LeRoy Hunner, M.D., Baltimore, Md. (by invitation).

Discussion by Nathan P. Sears, M.D., Syracuse.

"The Recognition and Management of Bladder Symptoms in Spinal Cord Disease," Ernest Milton Watson, M.D., Buffalo.

"Urology in Obstetrics," Henry G. Bugbee, M.D., New York.

"Urological Problems in Gynecology," Arthur Hilton Paine, M.D., Rochester.

Discussion by Walter Taylor Dannreuther, M.D., New York.

Wednesday, May 7th, 9.30 A. M.

"What can be Gained in the Thorough Study of the Treatment of the Serious Wounds in the Late War in its Application to Railroad Surgery," Edgar Albert Vander Veer, M.D., Albany.

"Disease of Cell Metabolism in Borderline Cases," Fenton Benedict Turck, M.D., New York.

"Acute Thyroiditis," George Everett Beilby, M.D., Albany.

"Surgical Treatment of Thoracic Empyema," Howard Lilienthal, New York.

Indications for Operation for Gastric and Duodenal Ulcer," Charles N. Dowd, M.D., New York.

Wednesday, May 7th, 2.30 P. M.

Joint Meeting with Section on Medicine.

Symposium on Anemias.

"Diagnosis Methods," Arthur Hawley Sanford, M.D., Mayo Clinic, Rochester, Minn. (by invitation).

"Medical Treatment," Louis Virgil Hamman, M.D., Johns Hopkins, Baltimore, Md. (by invitation).

"Surgical Treatment," Donald Church Balfour, M.D., Mayo Clinic, Rochester, Minn. (by invitation).

"Transfusion Method." Speaker to be announced later.

Discussion opened by Emanuel Libman, M.D., New York.

Thursday, May 8th, 9.30 A. M.

Joint Meeting with Section on Medicine.

Symposium on Reconstruction Surgery in the United States.

"Camp Work in the United States; Organization, Foot Inspection, Shoe Fitting, Moving Pictures," Major Peters and Major Taylor.

"Development Battalions," Lt. Col. Mock.

"Medical Organization Overseas," Lt. Col. Osgood.

(a) Medical Headquarters, correlation of activities in France and England.
(b) Professional Divisions. Medical and Surgical Consultants.
(c) Pre-combat activities.
(d) Combat activities.
(e) Radial control of cases.

"Surgery of the Front and Evacuation Hospitals," Col. Peck.

"Treatment of Gun-shot Compound Fractures and Joint Injuries," Col. Brackett.

Thursday, May 8th, 2.30 P. M.

Joint Meeting with Section on Medicine.

Symposium on Reconstruction Surgery in the United States.

"Surgery of the Peripheral Nerves," Major Frazer.

"Surgery of the Joint Deformities," Major Freiberg.

"Chronic Osteomyelitis resulting from Gun-shot Injuries," Major Ryerson.

"Loss of Bone Substance and Non-union following Gun-shot Injuries," Major Albee.

"Surgery of the Face, Plastic and Oral," Major Brown.

"Methods and Regions for Amputations and Treatment of Stumps," Lt. Col. Silver.

"Artificial Limbs, Types and Training," Major Emerson and Captain Yount.

"Plans of the Surgeon General for the Physical Reconstruction of the disabled soldier," Col. Billings.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Chairman, H. Dawson Furniss, M.D., New York.
Secretary, Thomas P. Farmer, M.D., Syracuse.
Place of Meeting, Court House.

Tuesday, May 6th, 2.30 P. M.

Joint Meeting with Section on Surgery.

Symposium on Urology.

"Diagnosis of Renal Colic," George William Stark, M.D., Syracuse.

"Differential Diagnosis in Stricture and Calculus of the Ureter," with lantern illustrations, Guy LeRoy Hunner, M.D., Baltimore, Md. (by invitation).

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"Urology in Obstetrics," Henry G. Bugbee, M.D., New York.

"Urological Problems in Gynecology," Arthur Hilton Paine, M.D., Rochester.

Discussion by Walter Taylor Dannreuther, M.D., New York.

Wednesday, May 7th, 9.30 A. M.

Symposium on Diseases of the Uterus.

"Physiology and Anatomy of Endometrium Changes," Lawrence Watson Strong, M.D., New York.

"Adenomyomata of Uterus," Thomas Stephen Cullen, M.D., Baltimore, Md. (by invitation).

"The Treatment of the Female Generative Tract," Howard Canning Taylor, M.D., New York.

"X-ray and Radium in the Treatment of Cancer and Fibroids," John Goodrich Clark, M.D., Philadelphia, Pa. (by invitation).

"Cautery Methods in Treatment of Cancer," Victor Leo Zimmermann, M.D., Brooklyn.

Discussion by James E. King, M.D., Buffalo, and George Birney Broad, M.D., Syracuse.

Wednesday, May 7th, 2.30 P. M.

"Chronic Appendicitis; A Study of Post-Operative End Results," Edwin McDonald Stanton, M.D., Schenectady.

Discussion by Gilbert David Gregor, M.D., Watertown.

"Post-Operative Shock Hemorrhage and Cardiac Dilatation," John Osborn Polak, M.D., Brooklyn.

Discussion by Donald Guthrie, M.D., Sayre, Pa. (by invitation).

"Repair of Complete Perineal Lacerations." Moving Pictures. Albert Scott Harden, M.D., Newark, N. J. (by invitation).

"Some Remarks on the Treatment of Leucorrhea," Frank McMorrow, M.D., Syracuse.

Thursday, May 8th, 9.30 A. M.

"Influenza as a Complication of Pregnancy," William T. Getman, M.D., Buffalo.

Discussion by Lillian K. P. Farrar, M.D., New York.

"Anesthesia and Eutocia," Carl Henry Davis, M.D., Chicago, Ill. (by invitation).

Discussion by Paul Tompkins Harper, M.D., Albany.

"Obstetric Surgery," Edward Parker Davis, M.D., Philadelphia, Pa. (by invitation).

Discussion by George W. Kosmak, M.D., New York.

"Podalic Version," Irving White Potter, M.D., Buffalo.

Discussion by James Aitken Harrar, M.D., New York.

"Corpus Luteum Extract in Vomiting of Pregnancy," a brief report, James Knight Quigley, M.D., Rochester.

Discussion by Eugene W. Belknap, M.D., Syracuse.

"The Management of Occipital Posterior Presentations," Edward B. Jones, M.D., Syracuse.

SECTION ON EYE, EAR, NOSE AND THROAT.

Chairman, James Francis McCaw, M.D., Watertown.
Secretary, Arthur J. Bedell, M.D., Albany.
Place of Meeting, Court House.

Tuesday, May 6th, 2.30 P. M.

Joint Meeting with Section on Medicine.

Symposium on Pneumonias.

"Arthritis; Etiology, Pathology and Diagnostic Methods," David Linn Edsall, M.D., Boston, Mass. (by invitation).

"Arthritis: Treatment," R. Garfield Snyder, M.D., New York.

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Discussion led by Augustus B. Wadsworth, M.D., Albany, and Oswald Theodore Avery, M.D., New York (by invitation).

"The Aural Complications," Edward Bradford Dench, M.D., New York.

Wednesday, May 7th, 9.30 A. M.

"Oblique Muscle Operation," James Watson White, M.D., New York.

"Some Neurological Cases with Eye Manifestations," Walter Baer Weidler, M.D., New York, and James Louis Joughin, M.D., New York.

"A Method of Computing Compensation Applicable to the New York State Workmen's Compensation Laws," Albert C. Snell, M.D., Rochester.

Discussion opened by John Elmer Virden, M.D., New York, and Arthur J. Bedell, M.D., Albany.

"Refitting Blinded Soldiers with Special Reference to St. Dunstan's, Regents Park," Lieut.-Col. George de Schweinitz, Philadelphia, Pa. (by invitation).

"The Effect of Prolonged Occlusion in Revealing Latent Muscle Imbalance," Frank William Marlow, M.D., Syracuse.

Wednesday, May 7th, 2.30 P. M.

"The Sub-Mucous Resection of the Nasal Septum," John Joseph Rainey, M.D., Troy.

A Clinical and Operative Session is in Preparation.

Thursday, May 8th, 9.30 A. M.

"Hay Fever and Asthmatic Observations," Sargent Francis Snow, M.D., Syracuse.

"The Influence of Diseased Sinuses on the Body in General," George F. Cott, M.D., Buffalo.

"Blood-clot Dressing in Mastoidectomy; Modified Technic Which Assures Primary Painless Healing without Deformity; Second Report," George Edwin Davis, M.D., New York.

Discussion opened by Irving Wilson Voorhees, M.D., New York.

"Further Observations on the Clinical Course and Treatment of Vincent's Angina," Clement Frank Theisen, M.D., Albany.

Discussion opened by Emil Mayer, M.D., New York.

"The Aural Significance of Vertigo," Irving Wilson Voorhees, M.D., New York.

SECTION ON PEDIATRICS.

Chairman, Frank vander Bogert, M.D., Schenectady.
Secretary, Robert Sloan, M.D., Utica.
Place of Meeting, Court House.

Tuesday, May 6th, 2.30 P. M.

"Adenoids, Chronic Conjunctivitis and Photophobia—A Case and Cure," George Dow Scott, M.D., New York.

Discussion by Clement F. Theisen, M.D., Albany, and John J. O'Brien, M.D., Schenectady.

"Colon Bacillus Infection in Infancy," Frank J. Williams, M.D., Albany.

Discussion by T. Wood Clarke, M.D., Utica, Godfrey Roger Pisek, M.D., New York, and Arthur Clesson Hagedorn, M.D., Gloversville.

"Problems in Weaning," Ten Eyck Elmendorf, M.D., New York.

Discussion by Thomas S. Southworth, M.D., New York.

"Milk Powder," A. Clifford Mercer, M.D., Syracuse.

Discussion by Roger H. Dennett, M.D., New York.

"The Atropin Treatment of Pyloro-Spasm and Pyloric Stenosis," Sidney Valentine Haas, M.D., New York.

Wednesday, May 7th, 9.30 A. M.

Symposium upon Child Welfare with Section on Public Health, Hygiene and Sanitation.

"Child Welfare Work of the United States Children's Bureau," Miss Julia Lathrop or a Representative (by invitation).

"Child Welfare Work of Pennsylvania," Samuel McClintock Hamill, M.D., Philadelphia (by invitation).

"Child Welfare Work in Massachusetts," Richard Mason Smith, M.D., Boston (by invitation).

"Child Welfare Work in New York State," Henry L. K. Shaw, M.D., Director Child Welfare, State Department of Health, Albany.

Discussion opened by Frederick W. Sears, M.D., Syracuse.

A subscription luncheon will be held at 1 P. M.; $1.00 per plate.

Wednesday, May 7th, 2.30 P. M.

"Experience in Children's Work Abroad during the War," Clifford G. Grulee, M.D., Chicago (by invitation).

"Eruption of the Teeth and the Subsequent Development of the Jaw," H. O. Brown, D.D.S., Rochester Dental Dispensary (by invitation).

"Obstipation in Children," Isidore H. Goldberger, M.D., New York (by invitation).

Discussion by Dewitt Halsey Sherman, M.D., Buffalo, and Leon Theodore LeWald, M.D., New York.

"The Measure and Development of Nutrition in Childhood," George Matthew Retan, M.D., Syracuse.

Discussion by William B. Hanbidge, M.D., Ogdensburg, and Edward Judson Wynkoop, M.D., Syracuse.

Thursday, May 8th.

The Pediatric Section will adjourn in order that its members may attend the meeting arranged by the Surgical Section "On Reconstruction Surgery in the United States."

SECTION ON PUBLIC HEALTH, HYGIENE AND SANITATION.

Chairman, William G. Bissell, M.D., Buffalo.
Secretary, Willard J. Denno, M.D., New York.
Place of Meeting, Court House.

Tuesday, May 6th, 2.30 P. M.

Symposium on Influenza.

Organized by Anna Wessels Williams, M.D., New York.

"Epidemiology," Paul Bellows Brooks, M.D., Director Division Communicable Diseases, State Department of Health, Albany.

"Bacteriology," Anna Wessels Williams, M.D., Assistant Director Bureau of Laboratories, New York City Department of Health, New York.

"Pathology," Augustus B. Wadsworth, M.D., Director of Division of Laboratories New York State Department of Health, Albany.

"Clinical Aspects," William Robert Williams, M.D., New York.

Wednesday, May 7th, 9.30 A. M.

Joint Meeting with Section on Pediatrics. Symposium on Child Welfare.

Organized by Frank vander Bogert, M.D., Schenectady.

"Child Welfare Work of the United States Children's Bureau," Miss Julia Lathrop or a representative (by invitation).

"Child Welfare Work of Pennsylvania," Samuel McClintock Hamill, M.D., Philadelphia, Pa. (by invitation).

"Child Welfare Work in Massachusetts," Richard Mason Smith, M.D., Boston, Mass. (by invitation).

"Child Welfare Work in New York State," Henry L. K. Shaw, M.D., Director Child Welfare, State Department of Health, Albany.

Wednesday, May 7th, 2.30 P. M.

Symposium on Military Hygiene and Sanitation.

Organized by Col. Frederick Fuller Russell, Surgeon General's Office, United States Army.

Titles of papers and readers will be furnished later.

Thursday, May 8th, 9.30 A. M.

Symposium on Laboratory Methods as Applying to Public Health.

Organized by Warren Buxton Stone, M.D., Schenectady.

"Standardization in Laboratory Technic," Frederic E. Sondern, M.D., New York.

Title to be announced. George Sellers Graham, M.D., Albany.

"The Wassermann Reaction; Its Value and Limitations." Speaker to be announced.

A Paper from the State Hygienic Laboratory, Albany.

"The Importance of Direct Examination of Exudates," Oliver W. H. Mitchell, M.D., Syracuse.

ENTERTAINMENTS.

Wednesday Evening, May 7th.

Banquet for the physicians.

Entertainments for Ladies.

Mrs. Thomas H. Halsted, Chairman Ladies Committee.

Tuesday Afternoon, May 6th.

Automobile drive and tea at the Bellevue Country Club.

Wednesday Afternoon, May 7th.

Luncheon at the Onondaga Golf Club followed by automobile drive or bridge party.

Wednesday Evening, May 7th.

Buffet supper for the ladies.

HOTELS.

Onondaga—Single room without bath, $1.75 per day and up; single room with shower bath, $2.00 per day and up; single room with tub bath, $2.25 per day and up; double room without bath, $3.00 per day and up; double room with bath, $3.40 per day and up; suite—parlor, bedroom and bath, $10.00 per day and up.

Yates—Single room without bath, $1.50 per day and up; single room with lavatory, $2.00 per day and up; single room with bath, $2.50 per day and up; double room without bath, $2.00 per day and up; double room with lavatory, $3.00 per day and up; double room with bath, $3.50 per day and up.

The Mizpah—Single room without bath, $1.25 and $1.50; single room with bath, $2.00 and $2.25; double room without bath, $2.00 and up; double room with bath, $2.50 and $3.50.

Jefferson—European plan, $1.50 and up per person; American plan, $3.00 and up per person.

Warner—European plan, rooms with bath, $1.50 single and $3.00 double; rooms without bath, $1.00 single and $2.00 double; (running water).

Truax—Rooms with bath, $1.75 and $2.00 single, $2.75 and $3.00 double; rooms without bath (running water), $1.00 and $1.50 single, $1.50 and $2.00 double.

Winchester—Rooms without bath, $1.00 single, $1.50 and $2.00 double; rooms with bath, $1.50 single, $2.50 and $3.00 double.

PRINCIPAL GARAGES.

Bissell's, 109 S. State St., 100 cars.
Buick, 815 S. State St., 100 cars.
Onondaga, 513 S. State St., 75 cars.
Cronin's, 571 S. Clinton St., 50 cars.

MEETING OF THE COUNCIL.

A special meeting of the Council was held in Albany on February 26, 1919, the President, Dr. Thomas H. Halsted presiding.

The meeting was called to order by the President at 1 P. M., and on roll call the following answered to their names: Drs. Thomas H. Halsted, Alexander Lambert, James F. Rooney, Marcus B. Heyman, W. Meddaugh Dunning, Floyd M. Crandall, Frederic C. Conway, Dwight H. Murray, Joshua M. Van Cott, Joseph B. Hulett, Luther Emerick, G. Massillon Lewis, R. Paul Higgins and Albert T. Lytle.

A quorum being present, Dr. Halsted announced the meeting open for business.

The meeting entered upon a general discussion, in which most of the members present took part, upon the bills of medical character pending before the Legislature, particularly the bill upon Compulsory Health Insurance.

Dr. Frederic C. Conway, Chairman of the Committee on Legislation, reported the status of bills pending before the Legislature.

Moved by Dr. Higgins that a special committee be appointed to consider the whole subject of Compulsory Health Insurance and to report at the next meeting of the House of Delegates—not seconded.

Moved by Dr. Rooney, seconded and carried that the President and the Chairman of the Committee on Legislation and other officially designated members of the State Society, be instructed to appear at any hearing on the Davenport and Donohue bills (Senate Int. No. 73, Print No. 73, Assembly Int. No. 90, Print No. 90), in opposition thereto.

Moved by Dr. Rooney, seconded and carried, that all officers and members of the Society who are now or who shall be hereafter officially designated to represent the Society are hereby instructed to oppose any measure for the enactment into law of a scheme for compulsory health insurance that provides for:

1. A system of medical benefits through collective bargaining as between panels or groups of physicians and local managers or representatives of insurance funds or insurance companies, in any manner whatsoever.
2. A system that in any way modifies or seeks to modify the liability of the individual beneficiary of the insurance scheme to meet his own contractual obligations directly and not through the medium of any such fund or the managers thereof.
3. A system that limits in any way the right of the individual beneficiary of the insurance scheme to exercise perfect freedom in the choice of his physician by the substitution therefor of a scheme of panels or group of physicians collectively bargaining with the managers of insurance funds or companies or employed under salary or otherwise by such insurance funds or companies.

There being no further business the meeting adjourned.

Floyd M. Crandall, *Secretary.*

Adjourned Meeting of the Council.

An adjourned meeting of the Council was held at the Education Building. Upon roll call the following answered to their names: Drs. Thomas H. Halsted, G. Massillon Lewis, Dwight H. Murray, Marcus B. Heyman, W. Meddaugh Dunning, R. Paul Higgins, Albert T. Lytle, James F. Rooney, and Joseph B. Hulett.

In the absence of the Secretary, Dr. Dwight H. Murray was appointed Secretary *Pro-tem.*

Dr. Augustus S. Downing, Assistant Commissioner of Education, read and explained proposed amendments to the Medical Practice Act. Moved by Dr. Murray and seconded by Dr. Lewis, and carried, that these amendments be approved and that the bill be introduced into both houses of the Legislature for passage at once.

The resignation of Dr. Frederic C. Conway, Chairman of the Committee on Legislation was received. It was moved by Dr. Rooney that it be not accepted. Motion not carried.

Moved by Dr. Lytle, seconded by Dr. Lewis, and carried, that the resignation of Dr. Conway be accepted.

Moved by Dr. Lewis, seconded by Dr. Higgins, and carried, that the President be authorized to fill the vacancy left through the resignation of Dr. Conway.

There being no further business, the meeting adjourned.

Dwight H. Murray, *Secretary Pro-tem.*

County Societies.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Regular Meeting, New York Academy of Medicine.
February 24, 1919.

At the regular meeting of the Society, the following report was presented, and on motion adopted:

To the Medical Society of the County of New York:

Your Committee on Compulsory Health Insurance has continued the study of the subject and, being creditably informed that the Governor intends to press some such bill to enactment, the committee has conferred with both professional and lay persons interested in the subject and offers the following as amendments to the Donohue Bill, Assembly Bill No. 90, for the consideration of this Society. In so doing the Committee wishes it to be distinctly understood that it in no wise commits itself either in favor of the Donohue Bill or of the scheme of Compulsory Health Insurance as a whole: that it simply presents the amendments to the bill in order that if some such a bill is enacted into a law, the interests of the medical profession may be properly protected and safeguarded.

Very respectfully submitted,
(Signed) Eden V. Delphey, M.D., *Chairman.*

Suggested Amendments to the Donohue Bill in Assembly, State of New York.
Introduction No. 90.

Amend Article 1, Section 2, page 3, line 13 by adding a new sub-paragraph, as follows:

10. Panel means a body of physicians duly licensed and registered according to law and corporated under and in accordance with the provisions of this Chapter.

Amend Article 1, Section 3, page 3, line 25 by striking out the word "and" after the words "United States."

Amend Article 1, Section 3, page 4, line 2, by adding the following:

* * * and employees whose wages are more than one hundred and twenty-five dollars per month.

Amend Article 2, Section 12, page 5, line 26, by striking out the entire section and substituting therefor the following:

12. Medical and Surgical Service. Local, trade, and establishment funds shall make arrangements for medical and surgical attendance and treatment for insured persons and the dependent members of their families with the panel provided for hereunder, and such arrangements shall permit insured persons to have free choice from among the members of such panel, subject to acceptance by such physician of such insured person as a patient. No member of the panel shall at any one time undertake or have charge of the care and treatment of more than five hundred insured persons with the dependent members of their families, and in computing such quota two insured persons without dependents shall be equivalent to one insured person with dependents. All arrangements for medical and surgical attendance and treatment shall include

compensation to be paid therefor and such compensation shall be determined in accordance with a schedule or schedules fixed by the commission in conjunction with the panel.

Article 2, Section 13, page 6, line 19, to be amended by striking out all such section and substituting the following:

13. Hospital or Dispensary Treatment. Funds shall furnish instead of all benefits hereunder (other than cash benefits to dependent members of insured person's family and funeral benefits) hospital or sanatorium treatment and maintenance of insured persons upon the consent of the insured person or that of a member of his family when it is not practicable to obtain his consent. Funds shall furnish dispensary treatment when necessary. Hospital, sanatorium or dispensary treatment shall be furnished only when requested by the insured person upon the approval of the medical officer of the fund, or when recommended by the attending physician in such case. All medical and surgical treatment given insured persons hereunder in hospitals, sanatoriums or dispensaries shall be given by physicians, surgeons or specialists who are members of the panel under arrangements provided for in accordance with Article 2, Section 12 of this Chapter. Provision for such treatment and maintenance shall be limited to the period for which the sickness benefit would otherwise be payable, and shall be provided in a hospital, sanatorium or dispensary with which the fund has made satisfactory financial arrangements for maintenance, nursing and all other necessary care incidental to medical or surgical treatment, or in one erected and maintained by the fund.

Article 2, Section 15, page 7, line 12 to be amended by striking the same out and substituting therefor the following:

15. Medical Facilities. Funds shall provide for proper laboratory and other facilities for diagnosis and treatment, and in addition to arrangements for medical and surgical treatment, shall make arrangements with dentists and with specialists who are members of the panel for consultations, treatments, and operations.

Amend Article 2, Section 19, page 8, line 26 by striking out all of this section and substituting the following therefor:

19. Maternity Benefit. Funds shall provide insured women and wives of insured men with such medical, surgical and obstetrical aid, materials and appliances as may be necessary for safe delivery in accordance with article 2, Section 12. When necessary for safe delivery, medical, surgical and obstetrical aid under this section shall be given in hospitals or sanatoriums upon the approval of the medical officer of the fund and the recommendation of the attending physician, surgeon or obstetrician. Such aid shall be provided in a hospital or sanitorium with which the fund has made satisfactory financial arrangements, or in one erected and maintained by the fund. Arrangements for medical, surgical or obstetrical aid in such hospital or sanitorium shall be made with the panel in accordance with the provisions of Article 2, Section 12 of this Chapter. Funds shall pay weekly to insured women a cash maternity benefit equal to the regular cash sickness benefit of the insured for a period of eight weeks, of which at least six weeks shall be subsequent to delivery. Cash maternity benefit shall be paid upon a certificate of the medical officer that the beneficiary is abstaining from gainful employment during the period of payment. Benefits under this section shall be in addition to all other benefits under this Chapter.

Amend Article 4, Section 56, page 18, line 23 by striking out lines 23, 24, 25, 26 and substituting the following therefor:

Make arrangements with the panel, hospitals, sanatoriums, dispensaries in accordance with Article 2, Section 12, and with laboratories, institutions, dentists, pharmacists and other persons necessary for the conduct of the business of the fund.

Amend Article 5, Section 81, page 25 by striking out lines 12, 13 and 14, and substituting therefor the following:

Arrange for the formation of such state and local advisory bodies to be consulted on medical and other technical matters relating to this Chapter as may prove necessary, and fix their powers and duties including the power and duty of investigating the operation of the system of mutual health insurance established under this Chapter, and of recommending to the Industrial Commission measures for improving the system's administration.

Further amend Article 5, Section 81, page 25, line 19 by inserting after the words, "hospital treatment" the words, dispensary treatment.

Further amend Article 5, Section 81, page 25, line 21 by inserting between "(3)" and the words, "financial arrangements" the following:

Make schedules in conjunction with the panel from time to time, at least once a year, of the fees and compensation mentioned and provided for in Article 2, Sections 13, 15 and 19 of this Chapter, and in the making of such schedules the said Commission shall take testimony of any witnesses that it may desire to call and of such witnesses as the panel may present. Such schedules when adopted or made by the Commission shall be subject to a right of review as provided for in Article 5, Section 83 of this Chapter.

Amend Article 5, Section 83, page 27, line 2, by inserting the word, appellate, before the word "jurisdiction."

Amend the Bill by changing Article 6 on page 27 to read Article 7 and insert new Article 6, and number Section 90 so as to make Section 93, as follows:

ARTICLE 6, PANEL.

90. Division of State into Districts.
91. Organization of Panel.

90. Division of State into Districts. The Industrial Commission shall within 60 days after this Act shall take effect divide the State into districts and each such district shall contain approximately 500 physicians duly licensed and registered as such in such districts.

91. Organization of Panel. The Industrial Commission shall thereupon be caused to be published in one newspaper published in the County where such district or districts shall be located, a description of the territorial boundaries of such district, and shall designate each district by number and County. Each physician duly licensed and registered according to law within such district shall be deemed thereupon for the purpose of organization to be a member of said panel, and shall be entitled as herein provided to participate in the organization of said panel. Within 30 days after the publication of the boundaries of any district as hereinbefore provided the members of the panel in said district shall meet and elect from their number a representative for the purpose of effecting the incorporation of the panel under this Chapter. Each such representative shall receive upon his election from the Chairman and Secretary of the meeting a certificate sworn to by them that he is the representative chosen in pursuance with the provisions of this section. Upon the filing of said certificate with the Industrial Commission there shall be issued by the said Commission to such representative a certificate under the seal of said Commission as evidence of his election. Within 60 days after the publication of the said boundaries

of said districts the said Commission shall set a time and place when the said representatives so elected shall meet for the purpose of organizing the said panel. The said representatives shall thereupon become the incorporators of the panel provided for in this Chapter. The said representatives shall thereupon proceed to complete the organization of said corporation law of this State. The said corporation, when organized, shall have all the powers of a corporation under the corporation law, and such powers in addition thereto as are necessary to effect the purpose of this Chapter. Membership in such panel shall continue subject to rules promulgated by the Commission after being formulated by the Commission in conjunction with the Panel.

MEDICAL SOCIETY OF THE COUNTY OF ERIE.

Regular Meeting, Buffalo, N. Y.

Monday, February 17, 1919.

The meeting was called to order in the Buffalo Medical College at 8:30 P. M. by the president, Dr. James E. King. The minutes of the last meeting and the minutes of the council meeting, held on February 5, were read and approved.

Dr. Jacobs, chairman of the committee on new members, presented the names of Drs. Charles S. Jewett, Henry J. Mulford, William H. Lane, John H. Wild and Douglas P. Arnold, for reinstatement in the society, on motion of the secretary, duly seconded and carried, they were declared reinstated.

Dr. Jacobs also presented the names of Drs. George S. Staniland, Mary J. Kazmierczak, Joseph P. Garan, Glenn A. Arthurs, John B. Mulholland, Lewis C. Kress, Everett F. Mercer, Morris E. Newman, Walter L. Allespach, Delzon N. Cott for election. On motion of the secretary, duly seconded and carried, they were declared elected.

The treasurer, Dr. Lytle, presented his completed annual report for the year 1918, which showed 664 members in good standing on January 1, 1918; 13 new members added and 12 reinstated, a total of 25. Loss by death, 8; resignation, 1; non-payment of dues, 19. Total number of members in good standing, December 31, 1918, 661. Total number of members in Government war service, 217. Total receipts for the year, $3.380.

Treasurer Lytle submitted an itemized statement of all the receipts and disbursements and asked for the requisite authority to have the books and accounts audited by an expert accountant.

The report of the treasurer was received and filed and the authority asked for granted.

The treasurer also reported on the activities and expenses of the Committee on National Defense, Medical Section, known as the War Committee. This report was likewise received and filed.

Dr. F. Park Lewis addressed the society on some of the problems of modern medicine with a suggested solution. He proposed a plan by which all the medical, dental and allied organizations may secure a permanent home. He also discussed the bill introduced by Mr. Davenport in the Senate proposing a State-wide health insurance law, and showed in what way this bill, if passed, would be a menace rather than a benefit to the community. He summarized the title of his address as "The Diagnostic Clinic: Health Insurance or Sick Insurance, Which?"

In the general discussion, which followed, Dr. Woodruff read a proposed agreement to be signed by the physicians, which was submitted by the Committee on Economics, in which the practitioners refused to work under this Davenport act in case it became a law.

Dr. Jacobs stated this same kind of legislation was being attempted in twenty-three States, and said that the inference was that some powerful influence was back of it to the extent of supplying the necessary funds to push the propaganda through all these legislatures.

Dr. Michel suggested a postal-card canvass of the people to be organized and carried through the medical profession with their clientele.

Dr. Howe suggested that Dr. Woodruff be made chairman of a committee to formulate a plan of action and confer with the medical societies in other parts of the State.

Dr. O'Gorman suggested that it would be advisable to learn the opinion of the party leaders on this question. Protests would avail nothing, and everything depended upon the action of the leaders. It would, therefore, be advisable to confer with the leaders in order to get them to think and act, as we consider advisable, both for the profession and the public at large.

Dr. Stockton moved that the president appoint a committee of three to consider the plan outlined by Dr. Lewis for the establishment of a diagnostic clinic.

Moved by Dr. Wall, seconded by Dr. Hopkins, that the society endorse the proposal of the Committee on Economics, relative to the Davenport bill on compulsory health insurance, and also moved the adoption of the proposed agreement submitted by the Committee on Economics.

After several changes had been made, the following agreement was adopted:

We, the undersigned members of the Medical Society of the County of Erie, do hereby protest against the proposed legislation leading to compulsory health insurance, now pending before the Legislature, under the caption of the "Davenport Bill," and because of our unalterable convictions and firm belief in the ultimate destructivness of the proposed method of practice to the interests of the public, we do mutually and severally agree that we will not engage in the practice of medicine under the proposed legislative enactment, or any similar enactment, that may hereafter be proposed. We do this because we are convinced from our experience and knowledge of the working of compulsory health insurance in foreign countries that this manner of practicing medicine will not secure good services for the sick or injured.

On motion of Dr. Pryor, the Committee on Legislation was instructed to use every means in its power to defeat the impending bill on health insurance.

Signatures were then requested to the agreement as adopted, after which the society adjourned for luncheon in the college library.

Meeting of the Council.

February 20, 1919.

The meeting of the council was called to order at 4:30 P. M. in the office of the health commissioner.

Present: Drs. King, Cowper, Jacobs, Lytle, Woodruff, Bonnar and Gram.

Dr. John V. Woodruff outlined the plans, which he considered necessary to educate the public and defeat the health insurance bill in conformity with the opinion of the County Society at its regular meeting, held February 17, 1919.

Moved, seconded and carried that the plan be approved.

The following resolutions were adopted:

That the Committee on Economics be authorized to employ newspaper publicity setting forth the health insurance question as it applies to the public.

That a propaganda be started among various societies, unions and organizations, relative to this health insurance question, and that great care be exercised in the selection of speakers and utilizing of a syllabus.

That the Committee on Economics and the Committee on Legislation select representative men to confer with the senators, assemblymen and party leaders, relative to this question.

That the Committee on Economics be authorized to have return postal cards printed containing the agreement adopted at the regular meeting, held February 17, 1919, and mail these cards to every member in the city and county with the request for signature and return, if the physician agrees with the views as outlined in the agreement.

MEDICAL SOCIETY OF THE COUNTY OF LIVINGSTON.

Regular Meeting, Avon, N. Y.

Tuesday, February 4, 1919.

The meeting was called to order in the Livingston Inn, at 11 A.M., by the president, Dr. Arthur L. Shaw.

The minutes of the last regular meeting, held at Geneseo, were read and approved.

The secretary announced the transfer of A. E. Engzelius, M.D., to the Medical Society of the County of New York.

The secretary read letters received from the Department of Narcotic Drug Control.

The matter of the establishment of a County Tuberculosis Hospital was brought before the Society by the secretary. Livingston County has purchased property for the establishment of a County Tuberculosis Hospital, but owing to the high cost of building and other factors present at this time the matter of construction has been delayed from time to time. This matter was discussed by Drs. Shanahan, Lauderdale and Wakeman, and on motion of Dr. Shanahan, seconded by Dr. John P. Brown, the following resolution was adopted:

Resolved, That owing to the high cost of construction and the comparatively small number of tubercular patients in Livingston County, the Board of Supervisors of Livingston County be respectfully requested to take up the matter of amalgamation of the County Tuberculosis Hospital movement with the County of Wyoming or other counties which might wish to join with Livingston County in the establishment of a joint County Tuberculosis Hospital.

Dr. B. R. Wakeman, sanitary supervisor, asked the opinion of the society as to the efficiency of the County Laboratory. The whole subject of County and State laboratories was freely discussed by Drs. Wakeman, Strasenburgh, Williams, Leach, Shaw, Shanahan and Lawrence. The present administration of the Livingston County Laboratory received the praise of the society.

On motion of Dr. Shanahan, seconded by Dr. Bowen, it was decided to hold the next meeting at Sonyea on the first Tuesday in May.

The society then adjourned for dinner, after which the following scientific session was held:

"Differential Bacteriological Diagnosis of Pneumonia," J. C. Lawrence, M.D., chief of Bureau of Venereal Diseases of the State Department of Health. Discussion by Drs. Roby, Jameson, Ayer, W. M. Brown, Callahan and J. P. Brown.

J. C. Ayer, M.D., then demonstrated the use of "Salvarsan in the Treatment of Syphilis," three patients being given salvarsan intravenously.

A number of physicians from adjoining counties were present as guests of the society.

The meeting adjourned at 5 P. M.

THE MEDICAL SOCIETY OF THE COUNTY OF ONEIDA.

Annual Meeting, Utica, N. Y.

Tuesday, January 14, 1919.

The meeting was called to order in St. Elizabeth's Hospital and the following officers were elected for the ensuing year: President, Howard J. Teller, Rome; vice-president, T. Wood Clarke, Utica; secretary, W. O. Weiskotten, Utica; treasurer, Robert Sloan, Utica; librarian, Edward R. Evans; censors, George M. Fisher, F. M. Miller, Morris J. Davies, William B. Roemer and Hyzer W. Jones; delegate to State Society, T. Z. Jones; alternates, George M. Fisher and Morris J. Davies.

The scientific session consisted of the following symposium, arranged by the society, acting with the Federal and State movements for the control of venereal disease, and intensive treatment:

"The Federal and State Laws, Covering Venereal Disease and What the State Department of Health is Doing in the Way of Establishing Free Clinics"—J. S. Lawrence, M.D., chief Bureau Venereal Disease, State Department of Health.

"Syphilis—Including a Clinical Demonstration of the Preparation and Administration of Salvarsan"—James C. Ayer, M.D., New York.

"Gonorrhœa—The Modern Treatment of the Acute and Chronic Stages, Including Treatment of Complications, Gonorrhœal Arthritis, Etc."—H. E. Marsh, M.D., New York.

Discussion opened by Joseph Clark, M.D., sanitary supervisor of the district.

MEDICAL SOCIETY OF THE COUNTY OF SUFFOLK.

Annual Meeting, Riverhead.

Thursday, October 31, 1918.

The meeting was called to order in the Griffin House at 11 A. M., and the following officers were re-elected for the ensuing year: President, Winfield S. Bennett, M.D., Patchogue; vice-president, David Edwards, M.D., East Hampton; secretary, Frank Overton, M.D., Patchogue; treasurer, Albert E. Dietrich, M.D., Bay Shore; censors: William A. Hulse, M.D., Bay Shore; Bradley F. Many, M.D., Port Jefferson, and John W Stokes, M.D., Southold.

The business session was followed by the scientific session.

President's address, "Medical Co-operation," Winfield S. Bennett, M.D., Patchogue.

"The Control of Acute Respiratory Diseases in an Army," Major C. H. Goddard, camp surgeon, Camp Upton.

"Influenza on Long Island," Arthur D. Jaques, M.D., sanitary supervisor, Lynbrook.

"Practical Dietetics," Lieut. V. K. LaMer, nutritional officer, Camp Upton.

THE MEDICAL SOCIETY OF THE COUNTY OF MONROE.

Annual Meeting, Rochester.

Tuesday, December 17, 1918.

The meeting was called to order at 9 P. M. by the president, Dr. James P. Brady.

The minutes of the previous meeting were read. Moved, seconded and carried that they be approved as read.

The secretary read the minutes of Comita Minora.

Motion was made and seconded that the secretary cast one vote for membership of J. Eugene Kraft.

Moved and seconded that the society pay the unpaid dues of members in service. It was moved by Dr. Jones, seconded by Dr. Mulligan and carried that the secretary be instructed to cast one ballot for the following officers, who had been nominated at the October meeting: President, E. G. Nugent, Rochester; vice-president, E. W. Ruggles, Rochester; secretary, B. J. Duffy, Rochester; treasurer, Irving E. Harris, Rochester; censors, Eugene H. Howard, Owen E. Jones, Wesley T. Mulligan, James P. Brady and James P. Fleming; delegates to State Society for two years, Wesley T. Mulligan, Owen E. Jones and B. J. Duffy; for one year, Irving E. Harris and Floyd S. Winslow; alternates, Eugene H. Howard, James P. Brady and Edward G. Nugent; milk commission, Seelye W. Little and Joseph R. Culkin.

An address followed by the president, Dr. Brady, on "Some Noted Physicians for the Nineteenth Century in America."

MEDICAL SOCIETY OF THE COUNTY OF GREENE.

Special Meeting, Catskill.
Wednesday, February 12, 1919.

At a special meeting of the Society the following resolution was unanimously adopted, a majority of the membership being present and voting:

The Medical Society of the County of Greene desires to again place itself on record at this time as opposing all sorts of so-called Industrial or Social Insurance, compulsory or otherwise, contained in such legislation as is now pending before the Legislature of the State of New York.

And further, be it resolved, that the Secretary enclose a copy of the above resolution addressed to Senator Walton and Assemblyman Showers, asking them to oppose such legislation.

MEDICAL SOCIETY OF THE COUNTY OF RENSSELAER.

Special Meeting, Troy.
Friday, February 28, 1919.

The Society held a special meeting to discuss the Health Insurance Bill now before the Legislature. It was attended by physicians, nurses and dentists of the vicinity, over 250 being present.

Addresses were given by Drs. James F. Rooney, Albany; John J. O'Brien, Schenectady; James H. Mitchell, Cohoes; John A. Perkins, Cohoes, and others. Much enthusiasm and interest was shown and at the close of the meeting the following resolution was unanimously adopted.

Be it resolved, That each and every practicing physician, surgeon, dentist and nurse in the County of Rensselaer pledge themselves to oppose the passage of the Health Insurance Bill now before the Legislature; that each one of them visit in person, or write the Governor and the Senator and Assemblymen of their respective districts that they pledge themselves that under no circumstances will they enter into any contract under this Health Insurance Law.

MEDICAL SOCIETY OF THE COUNTY OF SCHENECTADY.

Special Meeting, Schenectady.
Tuesday, February 25, 1919.

At a special meeting of the Society the following resolution was adopted:

Whereas, The Health Insurance Bill now pending before the New York State Legislature threatens to work incalculable harm to the medical profession; and, whereas, the grave problems arising in connection with this threatened legislation and the still graver problems which will arise if the bill is passed will call for action based on a very thorough understanding of all phases of the subject; and, whereas, if the bill is passed, the medical profession of this State will need to be in possession of the results of exhaustive researches into the subject in order that they may formulate intelligent demands and determine upon the best lines of action in all controversies arising with the various Boards administering the law, be it

Resolved, That in the opinion of the Schenectady County Medical Society the Officers of the Medical Society of the State of New York should proceed at once to collect and to put into available form all of the data obtainable which will be of service to the medical profession in enabling it to construct forceful arguments and to formulate intelligent demands in all matters pertaining to so-called health insurance.

If the funds available in the Treasury of the State Society are not sufficient for the purposes of this investigation it is the sense of this Society that sufficient funds should be raised by special assessment or by voluntary subscription.

ROCKLAND COUNTY MEDICAL SOCIETY.

Special Meeting, New City.
Tuesday, February 25, 1919.

A special meeting of the Society was called for the purpose of considering the pending legislation on the Compulsory Health Insurance Bills, and the following resolution was adopted:

The Medical Society of the County of Rockland at a special meeting held at the County Seat this 25th day of February, 1919, protest as a body against the passage of any Compulsory Health Insurance Bill at this session of the legislature without a public hearing, and that this resolution be sent to the Assemblyman and the Senator at Albany. Also to the Chairmen of the State and County Committees on Legislation for such action as they may take in their descretion.

A motion was moved and carried that each member of the Society telegraph a personal protest to the Assemblyman and Senator of this District.

MEDICAL SOCIETY OF THE COUNTY OF NIAGARA.

Postponed Annual Meeting, Lockport.
Tuesday, January 21, 1919.

The following officers were elected for the ensuing year: President, Lyman H. Wheeler, Lockport; vice-president, Robert P. Reagan, North Tonawanda; secretary and treasurer, Charles L. Preisch, Lockport. Delegates to State Society: Albert M. Rooker, Niagara Falls; alternate, Luther M. Jayne. Censors: Flavius J. Baker, Edwin Shoemaker and Walter A. Scott.

MEDICAL SOCIETY OF THE COUNTY OF JEFFERSON.

Annual Meeting, Watertown.
Thursday, January 16, 1919.

The following officers were elected for the ensuing year: President, Norman L. Hawkins, Watertown; vice-president, Cyrus J. Severance, Mannsville; treasurer, Andrew H. Allen, Watertown; secretary, Elgin R. McCreary, Watertown.

MEDICAL SOCIETY OF CHAUTAUQUA COUNTY.

Annual Meeting, Dunkirk.
Tuesday, December 10, 1918.

The following officers were elected for the ensuing year: President, Nathan E. Beardsley, Dunkirk; first vice-president, Elmer W. Powers, Ashville; second vice-president, George W. Cottis, Jamestown; treasurer, George F. Smith, Falconer; secretary, Josiah W. Morris, Jamestown; censor for five years, Era M. Scofield, Jamestown; delegate to State Society for two years, Vernon M. Griswold, Fredonia.

THE SCHOHARIE COUNTY MEDICAL SOCIETY.

Annual Meeting, Cobleskill.
Thursday, January 9, 1919.

The following officers were elected for the ensuing year: President, William W. Burgett, Fultonham; vice-president, Howard B. Bartholomew, Cobleskill; secretary, Herbert L. Odell, Sharon Springs; treasurer, LeRoy Becker, Cobleskill; censor, W. T. Rivenburgh; delegate to State Society, Herbert J. Wright; alternate, Howard B. Bartholomew.

LEWIS COUNTY MEDICAL SOCIETY.

Annual Meeting, Lowville,
Monday, February 10, 1919.

The adjourned annual meeting of the society was held at the court house, and the following officers were elected for the ensuing year: President, Howard A. Bassett, Lowville; vice-president, F. Edward Jones, Beaver Falls; secretary, Paul H. von Zierolshofen, Croghan; treasurer, Willis O. Hubbard, Lowville; delegate to the State Society, F. Edward Jones; alternate, William H. Cramer; chairman of Committee on Legislation, Paul H. von Zierolshofen.

THE QUEENS-NASSAU MEDICAL SOCIETY.

Annual Meeting, Jamaica.
Tuesday, December 17, 1918.

The following officers were elected for the ensuing year: President, L. Howard Moss, Richmond Hill; vice-president, Arthur D. Jaques, Lynbrook; secretary and treasurer, James S. Cooley, Mineola; censors, Robert F. Macfarlane, Henry C. Courten, Joseph A. Kerrigan, Louis V. Clarke and Margaret M. York.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

The Disabled Soldier. By Douglas C. McMurtrie, Director Red Cross Institute for Crippled and Disabled Men; President, Federation of Association for Cripples; Editor, American Journal of Care for Cripples. With an Introduction by Jeremiah Milbank. McMillan Company, New York, 1919. Price, $2.

Surgery in War. By Alfred J. Hull, F.R.C.S., Lieut.-Col. Royal Army Medical Corps; Surgeon, British Expeditionary Force, France, and Queen Alexandria Military Hospital. Preface by Lieut.-Gen. T. H. J. C. Goodwin, C.B., C.M.G., D.S.O.; Director-General, Army Medical Service. Second edition. 210 illustrations. P. Blakiston's Son & Co., Philadelphia, 1919. Price, $6 net.

Health and the Woman Movement. By Clelia Duel Mosher, A.M., M.D., Medical Adviser of Women, Leland Stanford Junior University. Second revised edition. The Woman's Press, New York City, 1918. Price, 60c.

Intravenous Injection in Wound Shock. Being the Oliver-Sharpey lectures delivered before the Royal College of Physicians of London in May, 1918. By W. M. Bayliss, M.A., D.Sc., F.R.S., Professor general physiology, University College, London; Chairman of the "Special Committee for the Investigation of Surgical Shock and Allied Conditions," appointed by the Medical Research Committee. Longmans, Green and Co., London and New York, 1918.

Hospital Accounting and Statistics. Fourth edition. Compiled and arranged by William V. S. Thorne, Treasurer and member of the Board of Managers of the Presbyterian Hospital, of New York; Chairman Executive Committee and member Board of Governors, Woman's Hospital, New York. E. P. Dutton & Co., New York, 1918.

Quarterly Medical Clinics. A series of Consecutive Clinical Demonstrations and Lectures. By Frank Smithies, M.D., at Augustana Hospital, Chicago. January, 1919, Volume I, Number 1. Medicine and Surgery Publishing Company, Inc., St. Louis. Annual subscription, $5, paper; $8, cloth; single copies, $1.50, paper; $2.25, cloth.

Book Reviews

Surgical Treatment. A Practical Treatise on the Therapy of Surgical Diseases for the Use of Practitioners and Students of Surgery. By James Peter Warbasse, M.D. Fellow American College of Surgeons, American Medical Association, American and New York Academies of Medicine, Surgeon Wyckoff Heights Hospital, Brooklyn. Three volumes, 2,400 illustrations. Volume II. W. B. Saunders Company: Philadelphia and London. Cloth, $30 per set.

The second volume of Warbasse's book on Surgical Treatment has promptly followed Volume I. The general merits of the treatise were commented upon in the review of the first volume. The present volume maintains the same standard of thoroughness of treatment, clearness of statement and judicious conservatism in the selection of material which was characteristic of the previous volume. The great cavities of the body, the head and spinal canal, the thorax and the abdomen, form the subject of this present volume and hence contain the marrow of modern surgery.

The position taken by the author as to the treatment of spontaneous cerebral apoplexy is worthy of quoting. He says:

"The indications for surgical treatment are those of pressure. Medical treatment offers much for the prophylaxis of the disease, but little for its treatment. Surgery can do much for this condition which in every respect is a surgical lesion. The blood coagulates quickly and the hemorrhage is usually ended in a short time. The progressive symptoms which continue are most probably the gradual changes, such as the development of a zone of edema, due to pressure. It is doubtful if the routine measures to lower the blood pressure in these cases are of value; it is certain that they often do harm. The rational treatment of this condition must be worked out, not by combatting the life-saving mechanism for regulating the systemic blood pressure, but by relieving the increasing intracranial pressure due to the presence of a foreign body.

Given a case of spontaneous apoplexy with stupor, or coma, flaccidity of the muscles of one side of the body and high blood pressure in response to intracranial pressure, and the other characteristic signs of hemorrhage in the internal capsule on the side of the brain opposite to that of the paralyzed muscles, the surgeon may expose the brain and relieve the pressure by draining the clot focus. The skull should be opened by trephine or burr just below or above the squamous suture. The dura is opened by crucial incision. The opening should be made sufficiently large to expose the lower end of the fissure of Rolando, the lower ends of the two central convolutions, and the fissure of Sylvius. The brain will often show edema or other local evidence of injection and hemorrhage. If not, it should be entered at the prominent rounded eminence of the lower end of the posterior central convolution just behind the lower end of the Rolandis fissure and above the Sylvian fissure. A trocar and canula of small size should be entered in a downward and inward direction. It should pass sufficiently above the fissure of Sylvius to avoid the island of Reil. By inserting the instrument in the middle of a convolution no vessels are injured. The apoplectic clot should be countered within two inches of the surface. A soft roll of rubber tissue to serve as a rubber drainage tube should be inserted through the canula. The clot may be expected to protrude itself through the tube.

Because of the intracranial pressure there may be some troublesome bulging of the brain after the dura is opened. This may be overcome by elevating the head of the table. Lumbar puncture may be required. As soon as the dura is opened the decompression should show itself in improvement in the patient's general condition. The results of these operations have not been collected sufficiently to place the operation upon a definite surgical basis. Most of them have been done too late when, as a result of laryngeal paralysis, inhalation pneumonia has been engrafted. Others have been attempted when the compression had exhausted the vasoregulator centres. But it can be safely predicted that, as a result of experimental work which is now being done, the operation will become an accepted surgical procedure."

Such a formal suggestion as to surgical interference in cases of the cerebral hemorrhage of apoplexy is certainly up-to-date surgery and is quite consistent with modern ideas of pathology and treatment. We congratulate the author upon having given the procedure a detailed description and fixed standing in the surgery of the head.

For the relief of intracranial pressure, as in cases attended with meningeal effusion, the imperative indication to provide drainage is recognized and various methods of meeting the indication are fully described, such as lumbar puncture, tapping of the ventricles and drainage of the subarachnoid spaces at the cerebromedullary angle and lumbar laminectomy. As a whole, the section devoted to the treatment of injuries and diseases of the head is most admirable and comprehensive.

It is not necessary to present any detailed analysis of all the sections of this admirable volume. It maintains fully the standard set in Volume I, and will be accepted by all as a trustworthy guide to the resources of surgery at the present time. L. S. P.

THE MEDICAL CLINICS OF NORTH AMERICA. Volume II, Number 1. (New York Number, July, 1918) & (Volume II, Number 2 U. S. Army Number, September, 1918). Philadelphia and London: W. B. Saunders Co., 1918. Published bi-monthly. Price per year: Paper, $10; cloth, $14.

This is the New York number and contains fifteen articles by physicians of that city.

The articles which would seem likely to interest the average general practitioner are one on Practical Immunization against Diphtheria, by Dr. William H. Park, one on The Relation of Pulmonary Tuberculosis to General Practice, by Dr. Charles B. Slade, and a third on The Minor and Misleading Early Symptoms of Disease of the Heart and Circulation, by Dr. Thomas F. Reilly.

Of the other subjects taken up, two are of value to physicians doing a lot of children's work, and these are The Cutaneous Manifestations of Acute Rheumatic Fever in Childhood, by Dr. Murray H. Bass, and Acetone Body Acidosis in Children by Dr. Oscar M. Schloss.

Volume 2, Number 2 (U. S. Army Number, September, 1918.)

This number is the September issue and is devoted to the writings of army medical officers. The opening article is by Surgeon-General Gorgas on Clinical Research in United States Army Base Hospitals, and of the nineteen remaining, six are given up to the consideration of the epidemics of measles and pneumonia with their complications, especially empyema.

Hospital management and administration are taken up and the deductions to be drawn from the examination of enormous numbers of men have been made use of to compile excellent tables of statistics. This, the military number, can be said to be one of the best and most instructive so far published.

W. H. DONNELLY.

AN ENQUIRY INTO THE ANALYTICAL MECHANISM OF THE INTERNAL EAR. By SIR THOMAS WRIGHTSON, Bart. With an Appendix on the Anatomy of the Parts Concerned, by ARTHUR KEITH, M.D., F.R.S. 254 pages. Illustrated. 8vo. London and New York: Macmillan Company, 1918. Cloth, $4.50.

Mr. Wrightson is an engineer by profession, who has devoted a good deal of his leisure time to the study of acoustics, and is an amateur musician. While he labels himself an amateur musician the book shows the author to be a master musician.

Hearing is considered as a tactile sense. Power transmitted in the form of sound waves is calculated as in the case of an air or steam engine delivering pressure in a hydraulic system. The basilar membrane is regarded as the time piston of the cochlear engine, actuated either by the foot plate of the stapes or, more indirectly, under certain conditions, by vibrations of air conveyed by the bones of the head to the outside envelope of the cochlea.

There are many illustrations of instruments and diagrams, showing the manner in which the author has worked out his theories as to the conduction, perception and analysis of sound.

The appendix written by Dr. Keith, is devoted to a more detailed description of the anatomy and physiology of the ear, and to the various theories of hearing.

C. N. C.

NEOPLASTIC DISEASES. A Text-book on Tumors. By JAMES EWING, M.D., Sc.D., Professor of Pathology at Cornell University Medical College, New York City. Octavo of 1,027 pages with 479 illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Cloth, $10 net.

A review of such a book as this would require more weeks than have been given me and more space than is here alloted to do it justice. These notes are quite inadequate. By summarizing a large field it has brought into concise form what is now known concerning Neoplasms. It includes a comprehensive study of the literature as well as the results of personal observation and recent experimental studies. It is to be regretted that all this work has not brought forth anything more definite in etiology and treatment, but we have here a complete working knowledge of the subject to date.

The earlier chapters dealing with the history of the subject, the various theories of the origin of tumors, their chemistry, natural history, and their effects upon the organism by way of metastasis, cachexia, etc., set forth in the light of modern research, should be of interest to all practitioners. The bulk of the volume is devoted to a detailed description of various kinds of neoplastic disease which will probably find divided interest in these days of specialization, but each one can find a complete study of the neoplasms of that part in which he is particularly interested, clearly and concisely written by one who knows whereof he speaks.

While the histological structure remains as the chief means of classification, the author makes a strong point that the clinical aspects of a tumor depend largely upon the tissue of organ in which it is growing, and that it should be studied in that light. His discussion of the subject is arranged accordingly. Some tumors that grow fairly characteristically wherever found are presented by themselves. This includes the benign mesoblastic neoplasms as fibromata, myxomata, etc. Most of the chapters, however, deal with the different tumors, benign and malignant, of the various organs. For example, the chapter on Tumors of the Breast describes the forms of mastitis, discussing the precancerous stage, accounts for the several benign growths, and gives in detail the anatomy, histology, course of growth and extension of the various forms of sarcoma and carcinoma, both from a pathological and clinical standpoint.

At the end of the text is found a complete bibliography covering 34 pages. F. A. H.

The Surgical Clinics of Chicago. Volume 2, Number 5, October, 1918. Philadelphia & London, W. B. Saunders Company. Published Bi-Monthly. Price per year: Paper, $10.00; Cloth, $14.00.

Congenital Wry-Neck has always interested the Surgical Profession and its treatment as suggested by Dr. Arthur D. Bevan of Chicago presents a method which should attract the attention of the Surgeons in general. The concluding discourse on the "Acute Abdomen" begun in the August number gives a complete résumé of the conditions which trouble the Internist as well as the Surgeon. This article is well worth reading a second time. Another article touches on a perfected technique for Posterior Gastro-Enterostomy which in itself is only a statement of methods for careful procedure rather than a new principle. Obstetrics comes to the front with a plea for inducing Labor at term rather than waiting for nature to start the phenomenon; while rather bold in its suggestion it has thought in it which seems to justify the procedure. Interesting articles on Genito Urinary work and Orthopedics are presented in detail. The volume is well worth the perusal of men interested in any branch of Surgery. E. W. S.

The Surgical Clinics of Chicago. Volume 2, Number 6. Index Number, December, 1918. Philadelphia & London, W. B. Saunders Company. Published Bi-Monthly. Price per year; Paper, $10.00; Cloth, $14.00.

Dr. Bevan's article on the "Undescended Testes" seems to bring the solution of the problem of Nature's failure nearer; certainly the principles worked out secure the best results to be attained in this unfortunate condition. The problem of the Faucial Tonsil is again discussed with many appropriate suggestions as to technique and also some of the pitfalls to be avoided. Associated Hematuria and Purpura is enlarged upon by Dr. Kretschmer and what is most interesting is the presentation of early and late treatment of injured fingers concluding with some suggestions as to Tendon transplantation in these finger and hand cases. The other subjects treated are of a general nature but presented in the same scientific method as is usual in this publication. E. W. S.

A Text-book of General Bacteriology. By Edwin O. Jordan, Ph.D., Professor Bacteriology University of Chicago and the Rush Medical College. Sixth edition, thoroughly revised. Octavo, 691 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, $3.75 net.

This sixth edition of "Jordan" has been revised and brought up to date. It makes no pretence of being an exhaustive treatise or of going into the details of special bacteriological technic but teaches the principles of bacteriology, the characteristics of pathogenic bacteria and has an excellent section on industrial bacteriology. It is a work which ought to find favor among teachers of bacteriology to medical and other scientific students. E. B. Smith.

Principles and Practice of Obstetrics. By Joseph B. DeLee, A.M., M.D., Professor Obstetrics Northwestern University Medical School. Third edition, thoroughly revised. Large octavo, 1,089 pages, 949 illustrations, 187 in colors. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, $8.50 net.

The third edition of Dr. DeLee's treatise on Obstetrics should receive from the medical profession the same hearty welcome accorded the previous editions.

The book has been thoroughly reviewed by the author and, as would be expected in a work of such excellence, but few changes were found to be necessary. Very little new material has been added, but several of the chapters have been somewhat enlarged. The use of the rectal examination as a routine during the progress of labor has been given more prominence, and the sections dealing with obstetrics anesthesia and analgesia, perineorrhaphy, cesarean section, and the treatment of contracted pelvis have been expanded.

A few new illustrations have been added and they are of the same high order as are those continued from the previous editions.

The book still stands as a most valuable aid and guide to the student and practitioner of this art.

A Manual of Gynecology. By John Cooke Hirst, M.D., Associate in Gynecology, University of Pennsylvania; Obstetrician and Gynecologist to the Philadelphia General Hospital. 12mo. of 466 pages, with 175 illustrations. Philadelphia and London: W. B. Saunders Company, 1918. Cloth, $2.50 net.

This is a difficult book to review for it is so compact that all one can do is to criticize or to praise. It has a surprising number of excellent illustrations for so small a book—about two to five in relation to the number of pages.

It is not a discursive philosophy but a didactic teaching manual, arranged in a logical manner, embodying the best in current practice and eminently fitted for a student who desires fundamental essential facts. E. B.

DEATHS.

John Alfred Bodine, M.D., New York City, died February 24, 1919.

Charles Gilchrist Briggs, M.D., Schenectady, died March 2, 1919.

Timothy Matlack Cheesman, M.D., Garrison-on-Hudson, died February 25, 1919.

Thomas Addis Emmet, M.D., New York City, died March 1, 1919.

W. Stanton Gleason, M.D., Newburgh, died February 3, 1919.

Henry Griswold, M.D., New York City, died February 1, 1919.

William B. Jones, M.D., Rochester, died March 1, 1919.

James Valentine Kern, M.D., New York City, died February 23, 1919.

Nathaniel Harris Kirby, M.D., Burdett, died March 1, 1919.

Frederick Mathews, M.D., New York City, died February 25, 1919.

William F. Mittendorf, M.D., New York City, died February 14, 1919.

Charles N. Palmer, M.D., Lockport, died February 3, 1919.

James Wiltse, M.D., Brewster, died February 2, 1919.

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

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EDITORIAL DEPARTMENT

MEDICAL SOCIETY UNIT.

A STRONG, vigorous and united organization is of paramount importance to the medical profession of this State. Such an organization benefits not alone its members, but the whole profession shares in the good that comes from united action.

New York State is the most mixed and varied, geographically, politically and socially, of any State of its size in the world. The medical practitioner reflects the region in which he lives as does no other citizen. The society, therefore, is made up of mixed and varied elements.

Assuming these two propositions, one corollary imposes itself. These varied and heterogenous elements must work together for the common good. Each must subordinate some of its wishes to the interests of other elements, with the feeling that each one has its rights.

Mexico is a glaring example of the opposite system. Each locality and faction fights to the death every other faction. And what is Mexico today? It is what our society would become if we adopted the Mexican principle of subverting every element that does not agree with our own. If we adopt such a principle and eliminate any of the fundamental activities of the Society, other eliminations will follow and disorganization will be the not distant result. It is an American principle that each one shall maintain his own faith, and at the same time respect the faith of others.

For many years the medical profession of New York was divided and discordant. For a long time all elements sought to terminate this condition and establish a united profession. After much labor and conscientious thought, a great united society was established and the old differences were forgotten. This was accomplished by the labor of the members of both organizations. In many activities these two organizations had adopted radically different methods. The men who organized our Society, therefore, as it exists today, were men of profound experience and selected for the united society what they found best in the old societies. This the younger generation should not forget. While concessions were necessary upon minor points, the fundamental principles were adopted by men of varied and different beliefs. They should be eliminated or seriously modified only after profound study and conscientious consideration. No one can work long in the administering of the society of today without increasing admiration for the wisdom of the founders. They established certain fundamental activities and one has been instituted since.

Before the amalgamation, one of the organizations had for a half century or more published an annual volume of transactions. It was a handsome and expensive volume, issued many months after the meeting, and was usually relegated to the shelf. The other organization published a monthly journal, which not only contained the transactions but acted as a medium of communication and information. After careful canvass of the two systems, a journal was adopted as incomparably the better of the two. Our journal is a scientific publication of the highest type, for it contains the transactions of the Annual Meeting, including the general sessions and the meetings of the six sections. Writers of papers select the State Society because they wish it as an audience. The JOURNAL carries their message to every member and gives them the full audience they seek. On the other hand, the member has the Annual Meeting brought into his own office.

The JOURNAL is an uniting force of extreme value, the cement which binds the constituent societies to each other and to the general organization. It is a medium of communication and a source of information absolutely essential to render the Society efficient and harmonious.

In 1862, a little pamphlet was published containing a list of physicians in New York City. This was the germ of all the medical directories since published in the State. In 1863, a medical directory was established in New York City and was expanded to include the States of New York, New Jersey, and Connecticut. Being published by a private society, the editor was privileged to include such names as he chose. He chose to exclude all homeopathists and eclectics, and a considerable number of regular physicians who did not conform to his ideas of a physician.

In 1884, the New York County Medical Society established a directory under the editorship of Dr. Daniel Lewis. By that time more liberal and less bigoted ideas began to prevail. The rational principle was, therefore, adopted that it should be a real directory and include the name of every physician licensed by the State to practice medicine.

In 1899, the Medical Association established a directory, edited and controlled by its State organization. At the time of the amalgamation, it was wisely decided that the State Society could issue from its central office a much more satisfactory directory than could any County Society, however conscientious it might be in its work. Two directories would be superfluous and an unjustified expense. Therefore, after much deliberation, the New York County Society consented to retire its directory on the promise by the officers of the State Society that an Annual Directory would be published containing essentially the data of the County Society Directory.

To a very large percentage of members, a directory is an absolute necessity in their daily practice. They regard it as the most important activity of the State Society, just as some others so regard the Legal Work. Abolishing, or seriously reducing either activity below the present standard would result in an enoromus loss in membership with the resulting impairment of the efficiency of the Society by the reduction of members, not to speak of the loss of income. Of still greater importance would be the ill-feeling and animosity that would be engendered between different localities and classes of members. If one element asserts that a special measure is of vital importance to it, the other elements should accept it, when it will work them no harm, even if they feel that it will do them no good.

The third of the original activities is the defense of members charged with malpractice. Ours is the only State society doing this work on the annual dues. In these modern days, so many doctors of medicine have no need for such service, that it has not been thought advisable by the other States to assess the expense upon all the members whether they derive benefit from it or not. In addition to the regular dues, they charge a special fee to those who express a desire for legal defense. While our method of financing the legal work has been criticized seriously, it is no doubt a credit to our society. It was a fundamental idea of the organizers that with our mixed interests, every element should and would stand by every other element, in things which it regarded as vital to its welfare.

The legislative work is an activity of very great importance. It is a peculiar fact that it is opposed by none and actively supported by few. Only when an undesirable bill slips through, and is enacted into law, does the general membership become interested.

A standing Committee on Medical Economics was formed in 1916 to meet a need that was but little appreciated thirteen years ago. It has already justified its existence and promises to be more and more an instrument of good as the economic difficulties of physicians become increasingly greater.

Each of these activities, with the exception of the legislative, has its extreme partisans and its extreme enemies. Each is a necessity to large and important elements of the Society, and its elimination or radical modification would certainly work grave harm. We are, today, a strong, vigorous and united Society. No great harm can come to us by attack from without. Our only danger is from dissention within. So long as we stand together, each one of our varied elements deferring to the interests of the others, we need fear nothing for our future.

Original Articles.

SURGICAL TREATMENT OF UNILATERAL RENAL TUBERCULOSIS: IMPORTANCE OF EARLY DIAGNOSIS.*

By HERMAN L. KRETSCHMER, M.D.,
CHICAGO, ILL.

ALTHOUGH the question of the surgical treatment of renal tuberculosis has been pretty definitely decided, at least by those who are most competent to decide such questions, there are still many physicians who are unaware of the fact that the best form of treatment for renal tuberculosis is surgery and, therefore, they cling to the medical treatment of these cases. While under certain circumstances one may resort to the use of tuberculin, fresh air, hygiene, etc., in order to fortify the patient before operation, this must not be construed as meaning exclusively medical treatment. This form of treatment, in other words, should not be carried to a point beyond where surgical treatment, which very often is the only remaining hope of the patient, must be refused. For a time it was advised to treat all patients with tuberculin before operation, but this suggestion finds few adherents today.

In only one other feature of urological surgery does one meet with the distressing and hopeless outlook that one so often sees in urinary tuberculosis and that is, in carcinoma of the bladder and prostate. The suffering and agony of a patient with an extensive tuberculosis of the bladder secondary to a tuberculosis of the kidney is most distressing and painful to see, especially if one contrasts such a patient with the patient who comes in early with just beginning vesical symptoms. Such a patient can be restored to complete health and perfect bladder function as a result of early surgical intervention. It is altogether too frequent an occurrence to have patients come in with an extensive tuberculosis of the kidney and bladder, giving the usual history of medical procrastination and errors of diagnosis due to lack of thorough clinical investigation. If a possibility of tuberculosis be thought of, a presumptive diagnosis can be made much more frequently than is generally supposed. Instead of even thinking of the possibility of tuberculosis, many of these patients are unhesitatingly placed in the great class of either cystitis or nephritis cases, because of the presence of pus or albumin or both in the urine. If the general practitioner, and it is he who most frequently sees these cases first, will bear in mind the possibility of tuberculosis in each case of cystitis that does not yield within reasonable time to the usual treatment for cystitis, many more early diagnoses would be made and hence an increasing percentage of better end results would be obtained.

It is surprising to see the various diagnoses that are made other than the correct one. In women the diagnoses of cystitis and nephritis are not made as often as they are in men. The diagnosis of uterine or ovarian trouble is made and the patient operated upon. Many of our cases have had operations upon the pelvic organs or appendix without obtaining any relief or cure of their symptoms. Many times in men because of a history of bladder distress a diagnosis of chronic gonorrhea is made and these patients subjected to all forms of needless instrumentation, such as bladder irrigation, passage of sounds and the treatment of the deep urethra with the endoscope. If one bears in mind that in nearly all these cases the diagnosis of genito-urinary tuberculosis is possible without resorting to the use of special instruments or equipment, and that each case of frequent urination associated with pus in varying amounts in the urine should be considered as a case of renal tuberculosis until it is proven otherwise, then the number of cases that miss being recognized will be very small instead of as it now is, very large.

Frequency of urination associated with other evidence of tuberculosis should immediately arouse our suspicions that we are dealing with a case of urinary or genital tuberculosis. Evidence of glandular tuberculosis, such as scars in the neck, the presence of evidence leading to, or the history of bone or joint tuberculosis, a nodule in the prostate or in the seminal vesicles, should at once point out the way for a study of the gross clinical evidence easily obtainable. The next step to establish this fact would be the demonstration of tubercle bacilli in the urine. Their presence would clinch the diagnosis with but rare exceptions, to be discussed below. The fact that tubercle bacilli have been found then calls for further study in order to discover the location of the tuberculous process. This, of course, means the employment of the finer instruments of examination, such as cystoscopy, ureteral catheterization, cultures of the urine, stains for organisms, animal inoculation, Roentgen-ray, etc.

The demonstration of tubercle bacilli in the urine is generally believed to be a difficult task and one that is only rarely rewarded by finding the organisms present. This is absolutely an erroneous conception in the minds of many men, doubtless due to the faulty teaching of several years ago, when it was taught that tubercle bacilli could only very rarely be demonstrated in the urine. While no rule is infallible, as a broad statement I wish to say that this is absolutely wrong. Tubercle bacilli can be demonstrated much more easily than is believed. The great difficulty is due to the fact that the search for tubercle bacilli takes time—and lots of it.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 22, 1918.

If, however, we cannot demonstrate the tubercle bacilli and the clinical symptoms and signs lead one to a diagnosis of tuberculosis, one may then resort to the use of the guinea pig. This is generally considered a "dead-sure" way and an easy way to pick up the organisms. That this method is not free from possible sources of error has been our experience. In the past year we have twice failed to find evidence of tuberculosis in the guinea pig, although the patients were suffering from renal tuberculosis, as proven by the demonstration of tubercle bacilli in the urine and furthermore, the kidney removed by nephrectomy showed the presence of tuberculosis. So that while the guinea pig is a very valuable method of demonstrating tubercle bacilli in the urine, one should not forget that this method, like any clinical method, has a certain percentage of error. In other words, physicians often have a sense of false security. They will say a patient has not tuberculosis because the guinea pig failed to show tubercle bacilli. In several instances this belief has led to wrong diagnoses and the patients were treated for other conditions and as a result the bladder process became more and more extensive. In but three cases of renal tuberculosis did we fail to find the bacilli in the urine. In one the clinical diagnosis of renal tuberculosis was made from the clinical symptoms and cystoscopic findings, although the autopsy of the guinea pigs was negative. In another instance we failed to demonstrate tubercle bacilli in the stained slides, although a cystoscopic diagnosis of renal tuberculosis was made and proved at operation.

The use of the cystoscope and ureteral catheter often gives us information which is suggestive of the side involved. The typical tubercles in the bladder and the ulcerating ureteral orifice are familiar to all of you and need no further discussion. The demonstration of the origin of pus and tubercle bacilli from one side and the presence of clear urine from the opposite side will establish the diagnosis.

Difficulties in Diagnosis.—In the cases of closed tuberculous pyonephrosis, pus and tubercle bacilli do not reach the bladder, so that the urine in this group of cases is perfectly clear and sparkling and the diagnosis is accordingly difficult. These cases because of circumstances have a good bladder capacity, so that repeated cystoscopic examinations and study can be carried out every easily.

There is another group of cases, however, in which both pus and tubercle bacilli may be demonstrated in the urine, and because of a contracted bladder cystoscopic examination cannot be carried out. This is the group of cases that generally come in late in the course of the disease and at a time when the bladder is enormously contracted, so that distention cannot be obtained. The mucous membrane is red and often shows the presence of many tuberculous ulcerations. Often one is not able to obtain the desired amount of distention even under deep anesthesia, so that ureteral catheterization is impossible, and hence no differentiation between the well and sick side can be made. Often the diseased ureteral opening can be seen and catheterized, still leaving one in doubt about the presence and function of the kidney to remain.

If I suspect tuberculosis but cannot demonstrate the bacilli, I have resorted to the procedure suggested by Buerger, namely, to excise with an operating cystoscope some of the edematous mucous membrane and subject this tissue to histological diagnosis. In one of our cases this procedure was carried out at a time up to which we were unable to demonstrate tuberculosis, which was done later.

Roentgen-Ray Diagnosis.—The Roentgen ray in the diagnosis of renal tuberculosis has not become a routine established procedure. This is apparent from the scarcity of the literature upon this subject as well as case reports. The late Dr. Krotoszyner, of San Francisco, reviewed the literature on this subject a few years ago and found it very scant. He came to the conclusion that roentgenography may be of definite value in the diagnosis of renal tuberculosis when other clinical methods fail. He was also of the opinion that the differential diagnosis of nephrolithiasis and renal tuberculosis by roentgenography is feasible in the presence of tubercles and renal caseation. He quotes Casper, Forseele, Hofmann, Holland, Cole, Proust and Infroid as having written articles bearing on this subject. Doubtless this lack of literature is in the main due to the fact that the cases of renal tuberculosis that come to the urologist with symptoms can be diagnosed by means of the cystoscope and ureteral catheter.

There is a small group of cases, however, in which cystoscopy for various reasons as above discussed cannot be carried out. It is in this at present small group of cases, that one may or should resort to the Roentgen ray as an aid in establishing the diagnosis. This method has served me in about three cases.

Exploratory Operation.—It is but rarely that one must resort to an exploratory operation. Still one may occasionally meet a case in which this must be used as a last resort.

Tubercle Bacilli in the Urine.—While thus far I have considered the methods which help to establish the diagnosis, there is another important aspect of this subject and one that has received but scant attention and one that is deserving of serious clinical study. It is not my object to discuss in detail the many phases and significance of tubercle bacilli in the urine with reference to the possibility of the normal kidney being able to excrete tubercle bacilli and yet this is a question that has not received enough attention.

Clear Urine.—It is generally believed, and rightly so, that a patient suffering from renal tuberculosis has as one of the signs upon which the diagnosis is based cloudy urine, due to the presence of pus in the urine. While this is in the main true, it is not an infallible sign. By this I mean that the opposite condition may be true, namely, that a patient may be suffering from a well advanced tuberculosis of the kidney and yet the urine may be free from pus, that is, the patient presents himself with clear urine. This can occur in the cases in which the ureter of this side is completely occluded and hence, the pus and bacilli will not be passed in the urine. I do not refer in this group of cases, to the so-called closed tuberculous pyonephrosis, but to the cases in which the ureter is patent. Attention is called to this point for the purpose of bringing before you the possibility of the patient's having an advanced renal tuberculosis and yet at the time he presents himself for examination the urine may be clear and free from pus. This phenomenon occurred in one of our cases in which the patient presented himself with a unilateral pyuria of high degree. The tubercle bacilli were demonstrated in the urine in the smear. The patient refused operation and went to his home in the country. He came back three months later with clear urine, free of pus. A pyelogram showed much destruction of the kidney parenchyma and our previous diagnosis of renal tuberculosis was verified when the kidney was removed by operation. This fact is mentioned to show that, although a patient may have an advanced renal tuberculosis, the urine may be free of pus at the time he presents himself for operation.

Another serious and important problem that is often difficult to interpret is the presence of the tubercle bacilli in the opposite, but supposedly well kidney. In cases in which the clinical signs, cystoscopic examination, a study of the ureteral urines and the symptoms permitted of a diagnosis of unilateral tuberculosis, tubercle bacilli have been found from the ureteral catheter specimens of the opposite or supposedly well side, as demonstrated by guinea pig inoculations. This question has recently received the attention of Beer, who cautions against the hasty removal of kidneys because of the presence of tubercle bacilli in the face of evidence involving both kidneys, and especially when there is a focus of tuberculosis in the genital tract. As a possible source of error he mentions the following three:

1. As an excretory phenomenon.
2. As the result of a reflux up the ureter of bladder fluid containing bacilli.
3. As gross contamination from cystoscope or ureteral catheters despite the greatest care.

While I have never had this problem to meet, it would seem to me that one of the easiest ways to obtain further information would be by resorting to a pyelogram.

Treatment of Renal Tuberculosis.—Let us briefly consider the so-called medical treatment. What, if any, are its advantages over the surgical treatment and what are the results accomplished? It would seem that in order to define their position the adherents of medical treatment should bring forth proof that renal tuberculosis can be cured. There must be of necessity a great deal of care exercised in stating that a patient is or has been cured of renal tuberculosis. What are the criteria upon which we rely in proving that a patient is cured of renal tuberculosis? First, the disappearance of bacilli from the urine. While it is generally believed that the tubercle bacilli are difficult to demonstrate, this fact is not true. While it may be possible that following medical management the bacilli may be correspondingly difficult to find, repeated examinations and failure to find them by any means, does not allow one to come to the conclusion that the patient has been cured by this or that form of medical treatment. Then, if the guinea pigs fail to show the presence of tubercle bacilli, one can assume that the case is cured.

Second, the diminution or even complete disappearance of pus from the urine may be only a transitory condition. In one instance at least I had the opportunity of seeing a very definite renal tuberculosis without pus in the urine.

Third, the diminution or disappearance of the bladder symptoms may be a temporary condition only. Those of you who are in a position to see large numbers of these cases have doubtless had a similar experience; Keyes has reported two cases with the disappearance of symptoms for two years in one case, and in another case for six years. In both cases it was necessary to remove the kidney at the end of the above-mentioned periods of time because of a lighting up of the symptoms. Gauthier's cases were demonstrated as cured at one of the French urological congresses. The animal inoculations were negative, they were unable to find tubercle bacilli in the urine and yet within six months there was a return of symptoms so severe that nephrectomy was done. Legueu does not favor tuberculin treatment. He has operated upon patients suffering from renal tuberculosis who were supposedly cured by tuberculin and the removed kidney showed the presence of extensive tuberculosis. It would appear that such case reports, though only few in number, are nevertheless strong proof of the failure of the tuberculin treatment. Pousson reports a case of the disappearance of symptoms for eighteen years and then their return.

If clinical cures are not obtained, is there any anatomical proof that renal tuberculosis can be cured? I think not. In the symposium on renal tuberculosis at the meeting of the American Urological Association held in 1916, E. L. Young, Jr., who dwelt on the subject, said that in the literature on renal tuberculosis he was not able to find any case which showed positive proof of the disappearance of renal tuberculosis. In the same symposium George Dock, who dwelt on the clinical and pathologic possibility of a spontaneous healing in renal tuberculosis without destruction of the kidney, said that his impression from a fairly extensive study, was that true healing of renal tuberculosis is rare. This lesion rarely tends to heal under general treatment, but has a strong tendency to complete destruction of the kidney, in which, however, the disease may be held in for a time with constant danger of a local or general infection at all times. He summarizes as follows:

"Pathologically the possibility of spontaneous healing in tuberculosis of the kidney must be admitted, but it cannot be looked for as a probability in actual practice. Dependence upon general measures of treatment is dangerous on account of the constant tendency to a progressive destruction of the kidney tissue and a descending infection."

If medical treatment as a cure for renal tuberculosis is a failure, is one justified in using this as a temporary measure before operation? Recently we have had occasion in one or two instances to postpone surgical treatment because of an acute complicating condition in the lungs, which necessitated sanitarium treatment, tuberculin, etc., but this was done with the full understanding that at the end of the régime the patient would be subjected to nephrectomy and the treatment was not carried out in lieu of nephrectomy. It seems to me that that is where the danger comes in.

Nephrectomy.—From the foregoing remarks it is evident that the treatment must be surgical in all cases of unilateral renal tuberculosis, and the earlier that the treatment is instituted, the better for the patient, provided, of course, that the second kidney is present and its function has been established. I agree with those who state that nephrectomy should be carried out just as soon as the diagnosis is made. The objects of nephrectomy are twofold. First, to remove the infected kidney and second, to relieve the patient of his or her bladder distress. In other words, to remove the infected kidney with the least possible risk and to give the patient the best possible end-result. I will not burden you with the technic, except to say that the usual oblique incision is made. The incision should be long enough to give a good exposure. The kidney is removed as rapidly as possible without any unnecessary trauma. The ureter is removed as far as is necessary and all perirenal fat that can be readily removed is removed.

Mortality.—The average mortality rate for nephrectomy for renal tuberculosis has been variously stated as from 2 to 4 per cent. While it is a question of immediate importance to the patient, the question of the end-result, namely, the relief of the bladder symptoms, is only second in importance. Experience has shown that by far these results are not all that can or should be desired, as is evident from a study of the post-operative histories of these cases. While in the largest majority of cases there is relief of the painful urinations, the frequency persists and in many instances is just as annoying after the operation as before. It may be said that the symptoms persist after operation as long as they are present before operation. It is evident, therefore, that in order to give the patient the best end-result, namely, complete relief of the bladder distress, the diagnosis must be made early and operation performed as soon as the diagnosis is made.

HYPERPLASTIC ETHMOIDITIS—DIAGNOSIS AND TREATMENT.*

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OF the chronic pathological conditions of the ethmoid, the one extremely common, troublesome and difficult of recognition in its incipiency is the chronic hyperplastic or non-suppurative type. This form of ethmoiditis has received, to my mind, comparatively little attention in contradistinction to that devoted to the chronic suppurative type, although as a matter of fact, early recognition and treatment of the hyperplastic form will in many instances prevent the latter. Often early diagnosis depends on subjective symptoms, when apparently no objective signs pointing directly to involvement of this region are present.

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The causative factor of hyperplastic ethmoiditis depends upon a protracted and more or less continued disturbance of nutrition of the ethmoid labyrinth rather than upon inflammatory changes with bacterial invasion—in other words, interference with the normal ventilation and drainage from obstructive lesions in and about the middle meatus would seem to justify the suspicion that this is the predominant factor. There is usually a history of repeated attacks of acute rhinitis, the process in the nose having subsided while the mucous membrane covering the ethmoid wall and outer surface of the middle turbinate, owing to defective drainage and existing thickenings from previous attacks, does not return to the normal; from constant irritation of secretion and because of the passive hyperemia, the mucous membrane undergoes hyperplasia. The condition at first is confined to the nasal wall of the ethmoid, eventually spreading to the ethmoid cells themselves. A superficial examination of the nose discloses nothing abnormal in early cases except a somewhat soft and thickened mucous membrane on the free border of the middle turbinate. Because no pus or polypi are seen in the nose and because the chief symptom is a profuse watery discharge, the examiner excludes, or rather overlooks the possibility of ethmoiditis being present and places the trouble in the class of cases of nervous irritability of the nasal mucous membrane, vasomotor disturbance or possibly a manifestation of hay-fever.

The continued slight irritation of a certain portion of the nasal mucosa causes at first a hyperemia with subsequent exudation of serum into the interstitial spaces of connective tissue. If the irritation be mild the hypertrophy will tend to spread itself over a broad area gradually losing its polypoid character into the surrounding tissue. If, however, it be of greater degree, the continued collection of serous elements, assisted by the force of gravity, will soon cause the appearance of true mucous polyp. Besides involving the lining mucous membrane of the ethmoid cells and the mucosa of the nasal wall of the ethmoid, these changes are especially common over the unciform process and the bulla ethmoidalis. In time the underlying periosteum and ethmoid bone become involved. The bone changes are the result in part of reabsorption and in part of newly formed bone, the former as a rule predominating.

Of especial interest is the opinions of the relationship of ethmoidal polyps to the underlying bone. These are divided between those who consider that the disease originates in the bone and spreads outward—this being the opinion expressed by Woakes, Lack and Packard and others who regard the changes in the mucous membrane as primary, and the invasion of the bone secondary —the view held by Hajek, Wright, J. M. Mackenzie. I. E. Woakes of London was the first to call attention to the relationship existing between nasal polypi and ethmoidal disease. He regarded polypi as a result of a necrosing condition of the underlying bone, designating the process as a necrosing ethmoiditis. Hajek, on the other hand, considered the term necrosing ethmoiditis a misnomer, his view as to the origin of polypi being radically different. As a result of extensive microscopical studies, Hajek concluded that polypi took their inception from the columnar, external layer of the epithelium and extended inward involving the periosteum and finally attacking the underlying bone; that no sign of necroses or caries of bone could be found, but that the osseous changes were those of increased bone formation and rarefying osteitis. The findings were later confirmed by Cordes, Uffenorde, Skillern and others, so that it is established that polyps and polypoid hyperthrophies are due to external causes and that the many changes in the bone are the result and not the cause of these pathological conditions. Cordes later partly changed his views, agreeing in the main with Hajek but regarding the recurrence of polyps as due to an osteitis or chronic periostitis with serous exudate; that when polyps arise from the mucous membrane, a simple removal will cure, but when they recur it proves an involvement of bone. Whichever view as to the origin of the polyps is held, there is the same necessity to remove all diseased ethmoidal cells, in order to affect a cure and prevent a recurrence.

Primarily hyperplastic ethmoiditis is a nonsuppurative disease, though a superimposed infection may at any time alter its character temporarily or permanently. A variety of views have been expressed since Grunwald's contention that all nasal polypi were practically pathognomonic of accessory sinus suppuration and Uffenorde's assertion that they have absolutely no relation, per se, to it. Uffenorde adhered to the opinion that suppuration was more often secondary to polypus. Skillern does not accept the views of Uffenorde in their entirety, but believes that nasal polypi, under certain circumstances, result entirely from irritation of purulent secretion exuded from the diseased sinuses. In suppurative ethmoiditis of recent origin, polyps are not present. Chronic hyperplastic ethmoiditis with polyp formation may throughout its course never be associated with purulent secretion. Likewise, chronic purulent ethmoiditis may never give rise to the formation of polypi. From time to time acute exacerbations from infection may occur during the course of a chronic hyperplastic ethmoiditis with formation of purulent discharge, but with the subsidence of the attack this discharge assumes its former profuse, thin watery character.

Cases of chronic purulent ethmoditis are seldom entirely free from purulent discharge with crust formation.

In latent types of suppurative ethmoiditis the nose is entirely free from discharge until an acute exacerbation through an infection or so-called cold takes place; in chronic non-suppurative or hyperplastic ethmoiditis, the nose is never entirely free from the characteristic thin watery discharge. In a number of instances I have received bacteriological reports of sterile purulent secretion in cases of purulent inflammation complicating chronic hyperplastic ethmoiditis. Polyps developing secondary to chronic purulent ethmoditis from constant bathing of mucous membrane with purulent secretion, are usually large and few in number and spring from those parts of the ethmoid which are low down and prominent, i. e., the uncinate process, bulla and middle turbinate. In non-suppurative ethmoiditis the polyps are small and numerous and occupy the various ethmoidal cells. The inferior turbinate in suppurative ethmoiditis is often distinctly atrophic, whereas in simple hyperplastic ethmoiditis it is frequently hypertrophic. It is impossible to give the reason for the occurrence of polypi in certain cases of suppuration and not in others. We do know, however, from clinical observation that they often occur entirely dissociated at any time with sinus suppuration and that a certain proportion of cases result from a chronic suppurative ethmoiditis.

Freer classifies the hyperplastic form of ethmoiditis into three groups. These are in reality different stages of the same disease.

1. Superficial hyperplastic ethmoiditis in which the most frequent manifestation is polypoid hyperplasia of the mucous membrane of the middle turbinate and middle meatus, especially in the region of the hiatus semi-lunaris. While there may be some softening and degeneration of the middle turbinate the bony structure of the ethmoid is not involved to any extent. There is no suppuration from the ethmoidal cells.

2. Deep seated hyperplastic ethmoiditis non-suppurative. This condition involves the lateral mass of the ethmoid bone to a varying degree, in extreme cases all of the ethmoid cells being degenerated to the lamina papracea. In operation upon such cases one finds that the entire middle turbinate and walls of the ethmoid cells have become softened and partly absorbed by a rarefying osteitis, so that the punch forceps penetrates with ease into the unresisting body of the ethmoid bone until firm bone is reached; this indicates the limit of the exenteration. Simple removal of polyps in such cases is useless; recurrence always takes place unless the underlying diseased bone is thoroughly removed.

3. Deep seated suppurative ethmoiditis. In this form numerous ethmoid cells may be filled with pus. The appearance, otherwise, does not differ from the non-suppurative type.

The symptoms by which hyperplastic ethmoiditis can be recognized are usually quite characteristic and fairly definite. The patient complains of constant or frequently recurring colds in the head not influenced by ordinary treatment. Paroxysmal attacks of sneezing, especially on rising, accompanied by profuse, watery discharge from the nose, are frequent complaints; the profuse discharge necessitates the use of half a dozen or more handkerchiefs daily; no stain, however, appears upon them, differing in this regard from the purulent form. After a time probably the most constant and disturbing symptom is headache, frequently described as burning or boring between the eyes, or it may be supraorbital. The headache accompanying this trouble may be more severe than in any form of sinus infection. I have had a number of undoubted cases of hyperplastic ethmoiditis in which this symptom was entirely absent, the patient simply complaining of a slight sensation of fullness or pressure in the upper part of the nose. On the other hand, this form of ethmoiditis may be responsible for a number of headaches varying from fullness over the bridge of the nose to severe pain over the entire head, without other definite signs or symptoms. Among other eye symptoms complained of are fullness in the eyeballs, pain on reading, so-called weakness of the eyes, scotoma, and especially increased lacrymation. The orbital manifestations of chronic hyperplastic ethmoiditis are interesting because of the obscure picture which they often present. They are usually of mechanical origin and are to be expected when we recall that the orbital and nasal cavities are supplied by the same sensory nerves. This affection on the other hand may run such a latent course that the patient consults us on account of other conditions, as disturbance of olfactory function, pharyngeal affections, tinnitus or impaired hearing—all of these taking their origin from this disease. The olfactory sense is usually affected in part through hypertrophy of the middle turbinate and in part through anatomic changes from occlusion of the olfactory space by encroachment of the polyps. This may take the form of a subjective cacosmia or the sense of smell may be entirely lost. The odor of which the patient complains is undoubtedly due to stagnation of secretion in some of the interstices behind the polypoid masses, with invasion of saphrophitic micro-organisms. In like manner an unpleasant taste is often present on arising, due to stagnation and fermentation of secretion which has collected in the choanæ during the night. Owing to the profuseness of the secretion and its irritating character, there is frequently present an eczema of the ala nasi and the upper lip. Asthma has long been recognized as a common reflex condition occurring during the course of some cases of hyperplastic ethmoiditis and amenable to treatment by the proper surgical measures directed to the ethmoid region.

What are the objective signs of the presence of this form of ethmoiditis? At the outset there may be but little discernible except hypertrophy or anaemia of the mucous membrane of the middle turbinate, of the area directly anterior to it and of the middle meatus (case 1), though careful inspection may reveal a beginning local polypoid change in the anterior end or the lower border of the middle turbinate. Uffenorde places special emphasis as a sign of diagnostic importance, in fact almost pathognomonic of hyperplastic ethmoditis, the soft, edematous condition of the mucous membrane of the outer surface of the middle turbinate. Occasionally one or two small polyps in the cleft between the middle turbinate and outer wall of the nose may be the only objective evidence of the disease. The appearance of polypi or polypoid swelling in the nose proper depends entirely on the position of the middle turbinate. If this structure lies close against the lateral wall of the nose (normal position) the ordinary macroscopic examination will disclose nothing abnormal, unless the disease has progressed for a long period of time.

Where the middle turbinate is in close contact with the outer wall of the nose, a long bladed Killian speculum inserted into the middle meatus after thorough cocainization, will reveal hitherto unsuspected changes in the ethmoid wall in early stage by means of inspection and the nasal probe. I have not found X-ray plates of any particular value in my cases of non-suppurative ethmoiditis. Advanced cases present no difficulty in diagnosis as examination reveals masses of polypi in the middle meatus. In marked cases the middle turbinate and all of the ethmoid cell-walls, except a few remaining spiculæ of bone, are absorbed and the lateral mass of ethmoid bone is replaced by polypi tightly wedged into a space bounded outwardly by the orbital plate and internally by the nasal septum. In such cases landmarks for operation may be lost, but the polypoid tissue and softened degenerated bone offer a guide; the operator knows when he has reached the boundaries of the disease as soon as his curet encounters firm hard bone. Many of the more advanced cases become secondarily infected and present the picture of a suppurative ethmoiditis. The important signs and symptoms to keep in mind, therefore, especially in the earlier cases, are: the soft edematous condition of the mucous membrance of the outer surface of the middle turbinate; stress should be placed on paroxysms of sneezing, the profuse watery discharge from the nose, severe headache usually supraorbital, and so-called weakness of the eyes. There may be no sign of pus in the nose, no polyps, and not until we open the ethmoid may we find the actual seat of the trouble. The severity of these symptoms depends largely upon the general condition of the individual as well as on the extent of the disease, as some cases of moderate involvement have symptoms of equal severity to those showing marked changes in the entire ethmoid labyrinth.

While occasionally one sees cases of one or more polyps springing from the middle turbinate or unciform process, for which a snaring operation is all that is necessary to establish a cure, it should, however, be borne in mind that this result is exceptional, as proved by their recurrence and increase in number. As it is established that these recurrences of nasal polypi are accounted for by the frequent failure to detect disease of the underlying bone, it follows that to effectively cure these cases a thorough curettement of the ethmoidal cells is necessary, until healthy bone is reached; this, in the earlier cases, may require a partial removal of ethmoidal cells, especially of the anterior group, but in the majority of cases I have found it necessary to do a complete exenteration.

The treatment to be adopted will depend upon the stage of the disease. Conservative treatment is useless after the disease has fully developed. In the earliest stages, when the condition of hypertrophic rhinitis is present, every effort should be made to promote and maintain proper drainage and ventilation of the ethmoid and other sinuses. Correction of a deviated septum, especially a high deflection, removal of hypertrophied anterior end of the middle turbinate when present, are indicated and may be regarded as conservative measures. Very often the improved ventilation of the ethmoid cells is all that may be required to bring about a cure of the earliest stages of hyperplastic ethmoiditis. In cases somewhat more advanced, removal of the anterior ethmoidal cells with curet and punch forceps, leaving the middle turbinate intact, not only provides the desired drainage and ventilation, but removes the polypoid tissue and diseased bone and at the same time leaves a considerable amount of healthy tissue in place, which is desirable for the welfare and comfort of the patient. Where the polypi are large and few in number and spring from the middle turbinate, pointing to the possibility of healthy underlying bone, simple snaring of these growths may suffice. It is a reprehensible practice to snare polyps without investigating the condition of the bone by means of a nasal probe. By following up their attachment by examination of the ethmoid capsule after refracting the middle turbinate we can determine the condition of the lining mucous membrane and decide upon the type of operation, whether simple snaring or an ethmoid operation is indicated. If the polypi are so large and numerous that this is impossible, it is fairly certain that the greater part of the ethmoid is diseased, and with it, in a majority of instances, the middle turbinate. If, after refracting the healthy middle turbinate, a few polyps are seen springing from the region of the bulla and uncinate process, the conservative procedure of snaring the polyps may be adopted to be followed by removal of the bony base, from which these spring, by means of a Grunwald forceps; the diseased cells are removed until the thin, whitish membrane which lines the normal ethmoid cells is seen. The middle turbinate may be left intact unless the anterior end shows evidence of disease. By pursuing the above course hyperplastic ethmoiditis may sometimes be effectively combated with preservation of the middle turbinate. The patient should be informed, however, that the purpose of this type of operation was to relieve his nasal obstruction and not to cure the disease, as there is always a possibility of early recurrence. As to whether a partial or complete exenteration should be done, this can, as a rule, only be decided at the time of the operation; in other words, the exenteration should extend as far as the pathological condition in the particular case warrants.

The importance of this form of ethmoiditis was recognized by Casselberry as early as 1894 in a paper read before the American Laryngological Society, in which he said: "Polyps are commonly one of the earliest manifestations of ethmoiditis and where present the case should not be dismissed with a simple snaring as adequate to the occasion, but should be viewed as a least suggestive of a developing disorder which is liable to culminate seriously unless controlled."

In advanced cases where there have been marked changes in the ethmoid bone and the function has been practically destroyed, or where complications have occurred or threaten, a radical exenteration is indicated.

I have found the Mosher operation ideal in every manner and adapted to all types of cases. Those who are accustomed to refract the middle turbinate and then enter the ethmoid through the bulla ethmoidalis, find the Mosher operation especially suitable where the middle turbinate is in close contact with the ethmoid capsule. After a thorough irrigation of the nose with normal saline, I place a strip of gauze one-half inch wide along the floor of the nose to absorb the excess cocaine to be used in anæsthetizing the field of operation. The inferior turbinate should have been previously diminished in size with cocaine solution 4 per cent. in adrenalin 1-1,000, so as to increase the space for operating, and at the same time lessen the risk of wounding the septum and so cause adhesions. The operation is performed while the patient is sitting upright in the ordinary chair, with the body bent somewhat forward and the head supported by a rest or held in focus by an assistant. I am not in favor of the reclining position because of the necessity of reorientating oneself as to the relation of neighboring vital structures. By thoroughly rubbing in powdered cocaine applied on an applicator, previously dipped into adrenalin 1-1,000, complete anæsthesia of the parts is obtained in five to ten minutes. Attention should be directed in the application of cocaine to all of the middle turbinate, especially the posterior end, the entire nasal wall of the ethmoid labyrinth, the region of the superior meatus and the area directly anterior to the middle turbinate. Hemorrhage during the operation is usually small in amount and readily controlled by adrenalin solution. The instruments used are Mosher curet, Faulkner curet, Grunwald biting forceps, medium size Luc forceps, scissor-punch, nasal probe. Before beginning the operation it is necessary to recognize an important landmark —the slight prominence in the region immediately in front of the anterior extremities of the middle and superior turbinates. This is the location of the most anterior group of ethmoid cells, called the aggar nasi cells. By having the patient's head well extended this prominent area comes better into view. With the point of the Mosher curet pressure on this eminence is made in a direction outward with a tendency downward and backward. The curet will pass just behind the nasal process of the maxilla, and will enter a cavity bounded externally by the lachrymal bone, posteriorly by the bulla ethmoidalis, and superiorly by the frontal sinus. Failure to enter the ethmoid labyrinth easily in this manner is often due to the fact that the curet is not placed high enough or far enough back. After entering this area the instrument should make a sweeping movement from without downward, inward and backward, and during this part of the operation the head should be held vertical or even a trifle flexed. In this manner the aggar nasi cells are broken down, the bulla is removed and the remainder of the anterior ethmoid cells are exenterated. I usually complete the removal of the anterior cells by means of a forward movement with the Faulkner curet. The cells about the fronto-nasal duct are in like manner cleared away, thus bringing the opening of frontal sinus into view. Beginning in the region of the bulla with the Faulkner curet the posterior cells are broken down step by step from before backward to the anterior wall of the sphenoid. Under inspection, the remainder of the cells are removed with the Grunwald punch. I leave the middle turbinate in place until the exenteration of the labyrinth has been completed, when, as a rule, it should be removed in order to prevent further impairment of drainage through the formation of inflammatory adhesions; furthermore, areas of polypoid degeneration, which otherwise would be overlooked, are more readily brought to view by a complete removal of the middle turbinate. I have observed that a majority of operators detach the middle turbinate by seizing it with a Luc forceps and after a number of twisting movements finally remove it. This I have found a rather painful procedure, to say nothing of the possible danger from attempts at pulling, which frequently accompany the twisting movements. I remove the middle turbinate by severing the attachment to the nasal surface of the ethmoid capsule by means of a scissor-punch, any fragments remaining are removed with the punch forceps or Luc forceps. Throughout the operation the parts should be brought clearly to view by means of strips of gauze moistened with adrenalin. After the operation a large cavity is seen above the lower turbinate with hard, firm walls, free from polypi.

Some operators prefer the biting or punch forceps to the curet in performing this operation, as they regard the latter instrument dangerous. I have not found this the case. By means of the curet I am better able to orientate myself at the start; I use the biting forceps freely later. Another objection given to the use of the curet is that instead of removing polypi it only pushes them aside. After the preliminary use of the Mosher curet, this objection can be overcome by the use of a sharp Faulkner curet which cut both ways, forward and backward. It must be remembered that the Mosher operation depends for its success on the ability of the operator to visualize the anatomical and pathological conditions that exist at the end of his curet. Without this, one cannot properly perform the operation. The ability that we possess to translate the impression we receive from the biting forceps fails to meet the requirements of the operation.

As to the serious results of the operation—these are undoubtedly present in careless or inexperienced hands. I am in full accord with the views expressed by Dr. Mosher that "any one who does work on the ethmoid labyrinth without proper anatomical and surgical preparation, simply has no surgical conscience." The operation should only be performed by those who have acquired the power to visualize the anatomic structure he is engaged in operating on. The danger in such an operation lies in scraping round in the dark or attacking any cell without seeing just what he is doing. The chief danger is injury to the cribiform plate. This may be averted by directing pressure outward, backward and downward and always working external to the middle turbinate, retaining the latter as a landmark to the end of the operation. Perforation of the orbital plate is revealed by emphysema or ecchymosis of the eyelids. An orbital abscess may follow. I never allow my patient to blow the nose during the operation and for some time afterward, as occasionally a dehiscence may be present in the orbital plate or if the plate has been entered accidentally further trouble may be avoided.

I shall briefly recall to your minds some of the important anatomic relations which have a surgical bearing in ethmoiditis. The roof of the ethmoid labyrinth is formed by the floor of the anterior cerebral fossa. The bone forming this wall is rather firm as compared with the much more fragile cribiform plate and orbital wall. It is especially important to remember the relation existing between the ethmoid cells and the cribiform plate. The bony wall forming the roof of the labyrinth joins the cribiform plate, but at no point do the ethmoid cells come in contact with this plate. The cribiform plate forms the roof of the meatus nasi communis. In order, therefore, to avoid perforating this delicate structure when operating on the ethmoid labyrinth, it is important to keep out of the olfactory fissure. This is best accomplished by allowing the nasal wall of the labyrinth and the middle turbinate to remain until the exenteration of the ethmoid cells has been completed, when both of these structures may safely be removed. Particular care should be exercised in manipulating with the curet in the anterior space between the septum and the outer nasal wall. As the head is extended in first step of the operation the curet is directed not backward toward the sphenoid, but brings it in relation to the floor of the anterior cranial fossa which dips down lower in front than it does posteriorly. After the initial step in the operation, entrance into aggar nasi cells, the head should be kept in vertical position throughout the remainder of the operation. All boring moving with the curet or forceps must be avoided.

As to the after treatment; no packing is left in the nose, a piece of sterile cotton may be loosely fixed in the nostril and changed when necessary. The nasal cavity is left alone for three days, and then as the reaction passes off it can be cleaned with a warm alkaline solution so as to facilitate the expulsion of blood-clots and the removal of semi-detached tags. During the after treatment the operator is sometimes disappointed to note what appears to be masses of recurrent polypi, but in many instances these are simply composed of edematous mucous membrane and subside as soon as the reaction has passed. The results of the operation are highly satisfactory, especially in cases where there is no suppuration in the adjoining sinuses. If a few polypi are found some time later to have escaped removal, they can early be dealt with under cocaine. If suppuration in the adjoining sinus is present this is now more amenable to treatment and cure with lessened likelihood of recurrence of polypi. Following an ethmoidectomy any tendency toward dryness of the nose after healing seems to be successfully prevented by compensatory swelling of the inferior turbinate.

The following cases illustrating the various types of chronic hyperplastic ethmoiditis and their treatment have been selected from a series which have been under my care.

Case I.—E. S., female, aged 30 years. No complaint until four months ago. At that time she began to have violent attacks of sneezing, especially in the morning. Increased lacrymation, intense headaches, supraorbital and temporal, almost continuously and at times neuralgic in character. Loss of sense of smell. Sensation of pressure behind the eyeballs and sense of fullness in the nose. X-ray examination negative. Nasal examination: No polyps or pus to be seen. Profuse, thin, watery discharge in nose. Septum very much thickened high up in region opposite the middle turbinate and in contact with it; nasal chamber very narrow—middle turbinates (right and left) in close contact with the outer wall of the nose. Mucous membrane of middle turbinate anaemic in appearance, soft and thickened, especially lower free border of area directly in front of it. Submucous resection and removal of the anterior ends of the middle turbinate gave complete relief by effecting proper ventilation and drainage of the sinuses, especially the ethmoid. This case illustrates the symptoms and effect of treatment upon the earliest stages of hyperplastic ethmoiditis.

Case II.—A. R., aged 28, was seen by me at the nose and throat department, New York Post-Graduate Hospital, service of Dr. MacPherson. Patient complained of frequent attacks of "colds in the head"; paroxysmal attacks of sneezing; supraorbital headaches, no interference with nasal respiration. X-ray examination negative. Nasal examination: Inferior turbinate hypertrophied. Anaemic area of mucous membrane over anterior end of middle turbinate and in region directly in front of it. Examination with nasal probe: Mucous membrane over border of middle turbinate thickened. After applying cocaine and adrenalin, two small polypi ¼ inch in diameter could be seen in the cleft between the middle turbinate and outer wall of the nose on the right side. On the left side a solitary polypus of apparently same size. After thorough cocainization of middle turbinate and middle meatus, introduced a long-bladed Killian speculum in the middle meatus and refracted middle turbinate. This procedure immediately brought to view a considerable number of polypi, all small in size. Treatment: Thoroughly curetted anterior ethmoidal cells (left side) until normal cells were encountered. Middle turbinate left undisturbed. Same procedure on right side two weeks later. Symptoms of which patient complained ceased, but patient was instructed to return upon slightest recurrence.

Case III.—A. H., aged 25 years, female. Had attacks of "cold in the head" for many years. Three years ago began to have violent paroxysms of sneezing and profuse watery discharge from the nose. A dozen or more handkerchiefs used daily. No headache or tearing. Sense of fullness and pressure at the root of the nose. Defective nasal breathing. Polypi were removed with snare three years ago, relief for one month. Polypi again removed last fall with little or no relief. X-ray examination, negative. Nasal examination: Polypoid degeneration middle turbinate and numerous polypi both sides above and below the middle turbinate. Snared few polyps and after refracting middle turbinate, many more polyps traced with nasal probe to deeper region of ethmoid labyrinth. Thorough cocainization; then did complete exenteration following Mosher procedure. Removed middle turbinate in its entirety. The operation gave decided relief from sneezing and profuse discharge, although patient still complains because of diseased right ethmoid. The latter will be operated on in two weeks.

Case IV.—Male, aged 31 years (B. L.). Duration of complaint one year. Attacks of paroxysmal sneezing, thin, watery discharge; frequent colds, increased lacrymation, burning pains in eyeballs. Defective nasal breathing. No headache. X-ray examination and eye examination, negative. Nasal examination: Right side, middle turbinate enlarged, cystic in appearance. Many of polyps small and large springing from region above and below the middle turbinate. Inferior turbinate hypertrophied. Changes on left side not so marked; polyps small and few; middle turbinate, polypoid degeneration. February 1, 1918, complete exenteration of ethmoid cells and removal of entire middle turbinate. Right side I found the posterior ethmoid cells extensively involved; long partition between cells in large part absent. April 19, 1918, similar operation, left side. On snaring few polypi and refracting middle turbinate, with nasal probe determined marked involvement apparently to the anterior wall of the sphenoid sinus. With curet and biting forceps removed all polypoid until smooth orbital plate and healthy bone of anterior wall of sphenoid was reached. Until the present there have been no recurrence of symptoms or polypi.

Case V.—R. T., aged 35 years, female. Patient referred to me by Dr. H. H. Forbes just previous to his departure for service abroad. Patient had polyps removed at various times by means of snare, with only temporary relief from violent paroxysms of sneezing, intense frontal headache, neuralgic in character. At times watery discharge assumed purulent character, especially during severe attacks of coryza. X-ray examination, negative. Nasal examination: Landmarks of ethmoid region entirely absent, both sides; middle turbinate and lateral mass replaced by polypi and polypoid tissue. I did complete exenteration of ethmoid cells with marked relief from symptoms of which patient had complained.

Case VI.—S. W., aged 26 years. Complains of severe frontal headaches. Defective nasal breathing. X-ray negative. Polypi above and below middle turbinate. Both middle turbinates polypoid degeneration. Marked deflection and thickening of septum to the right side above and left below. I did a submucous resection of the septum to obtain better access to ethmoid regions and six weeks later did ethmoid exenteration of left side. Three weeks later on the left side. Emphysma of upper and lower eyelid twenty-four hours after last operation. Patient had blown her nose on the day following operation contrary to orders and immediately experienced sharp pain in left eye—upper and lower lids began to swell. Distinct crepitation could be felt in the lids. Eye symptoms disappeared entirely in five days by use of cold applications. Headache still complained of, but not so severe. Other symptoms have ceased.

Case VII.—Aged 27 years, was seen by the writer at the nose and throat department, New York Post-Graduate Hospital, service of Dr. MacPherson, two days before reading this paper (May 20, 1918). She complained of asthma of nine years duration, the attacks occurring in severe form once or twice a month. Between these attacks patient suffers almost constantly from coryza. Paroxysms of sneezing and profuse thin discharge are annoying complaints. The discharge at times is purulent, especially during attacks of acute coryza. Frequently has supraorbital headaches. Has constant burning in eyes and sometimes increased lacrymation. X-ray examination requested. Nasal examination: Marked deviation of nasal septum to the right. Septum in contact with outer wall of nose high up on right side so that middle turbinate cannot be seen. On left side, middle turbinate very much hypertrophied, especially anterior end. Along free border of middle turbinate and directly in front of its anterior end, mucous membrane is distinctly anaemic in appearance and feels soft and thickened to nasal sound. Enlarged bulla ethmoidals can be seen in cleft between middle turbinate and outer wall of nose. No polyps or pus in the nose. Post-nasal examination shows deviation of septum to the right, hypertrophied middle turbinate, and hypertrophied posterior tip of inferior turbinate. The indications in this case are to improve the ventilation and drainage of the sinuses by removal of the hypertrophied anterior end of the middle turbinate and correction of the deviated septum. The condition of the left ethmoid capsule can be determined after removal of the anterior end of the middle turbinate.

Conclusions.

1. Hyperplastic ethmoiditis results from continued irritation of the nasal mucous membrane without infection; when infection occurs suppurative ethmoiditis results.

2. Symptoms are usually characteristic. A thickened membrane on the outer wall of the middle turbinate and the floor of the ethmoid capsule may be the first objective sign of the presence of the condition. Middle turbinate should be refracted in such cases.

3. Simple hyperplastic ethmoiditis may throughout its course never show signs of pus formation. Purulent ethmoiditis may never give rise to polypi formation. The presence of pus during the course of hyperplastic ethmoiditis is due to irritation and secondary infection.

4. Opening into the ethmoid is indicated when signs of hyperplastic ethmoiditis exists with subjective symptoms.

5. The Mosher operation is the ideal method of exenterating the ethmoid cells. A thorough knowledge of the anatomical relations and pathological conditions present are essential.

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A CASE OF TRAUMATIC HYSTERIA WITH AMAUROSIS.*

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THE case to be presented is that of a male, native born Italian. According to his pastor, who had attended him and acted as interpreter, he came to this country after the opening of the present war, presumably to escape conscription. In his native land he was a professional musician; in America he was forced by necessity to resort to manual labor. On January 24, 1917, in the course of his work, his left eye was struck by a fragment of broken china. The result of the injury was immediate blindness of this eye and closure of its lids. During the following two months he was treated privately with Violet Ray. At the end of that period the doctor announced the presence of a corneal ulcer. Following this he was a patient in two hospitals, before he entered the Manhattan Eye, Ear and Throat Hospital. For several months he received compensation, small in amount. This was discontinued because of authoritative opinion that the condition present was not due to injury.

This patient came under my observation on November 12, 1917. The right eye appeared normal to inspection. On the left side, the upper lid drooped to such extent that the palpebral fissure was closed. The skin of the lid was smooth and unwrinkled as was also that of the forehead. The eyebrow was on a lower level than the right. With upward rotation of the eyeballs there was co-ordinate elevation of the upper lid, the lower remaining in apposition. With this movement, no over-action of the frontalis was observed. Forcible elevation of the drooping lid disclosed appreciable resistance and the presence of a fine tremor. Upon release there was spontaneous closure. Separation of the lids induced profuse lacrymation. The ocular conjunctiva was moderately injected. The cornea was clear and careful search failed to reveal any source of local irritation. On the contrary, it was found that the cornea and bulbar conjunctiva were insensitive, the lid reaction being almost completely abolished while the lacrymal reflex was active.

The direct and consensual light reactions, as well as the convergence reaction of the right pupil, were normal. The left pupil was dilated and fixed as a result of atropine. Ophthalmoscopic examination showed that the media and fundus of each eye were normal and that no appreciable ametropia was present. Subjectively, the right eye had visual acuity of 20/200, the left no perception of light.

For the following two weeks, the patient was under close observation, but no evidence of simulation was discovered. During the interval, it was found that the right cornea and conjunctiva were insensitive, also with retention of the lacrymal reflex. After the period specified, conditions were unaltered except that of the right pupil. This was moderately dilated and its reactions to light and convergence, while present, were impaired. Subjective examination gave the following results: by means of the Cuignet or pencil test it was demonstrated not only that fine print could be read by the apparently blind eye but also that the accommodation was active. With a 1 D. concave lens over the right eye vision was 20/20—while with a 16 D. convex lens over this eye 20/50 was joyfully read. The visual field of the right eye was tested by daylight, on a perimeter, with 10 m.m. squares, changeable by rotation, moved from the periphery toward the center of the arc. The findings obtained from repeated readings, with rest intervals, were moderate concentric contraction of the field for white with similar contraction of the color fields except temporarily, where there was interlacing. On the horizontal meridian the blue field was contracted 30°, the red 15° while the green overlapped both.

As a result of these findings and in view of the sudden onset co-incident with injury, a diagnosis was made of traumatic hysteria.

The lid findings represented a spastic or pseudo-paralytic ptosis. Although Parinaud has stated that this condition is always due to hysteria, its conscious simulation seems conceivable. In this case, however, the history of spontaneous reflex closure, emphasized by long continuance without evidence of relaxation made it improbable. It seems to me that the case, in this respect, is analogous to the one reported by Bardol, in which spastic ptosis resulted from a flash of lightning. Commenting on this case, Binswanger expressed the opinion, in accordance with that of Wilbrand and Saenger, that, in this and similar cases, the spastic ptosis should be regarded as a pathological persistence or exaggeration of the physiological cortical reflex.

The epiphora evidently was functional and the anæsthesia undoubtedly so, as shown by the presence of the lacrymal reflex. This anomaly as a means of differentiation between hysteria and an organic lesion has been emphasized, particularly by Spiller.

Concerning the pupil, the partial dilatation, the curtailed reflexes and the presence of a normal accommodation indicated that the mydriasis was spastic. In this connection it is of interest to note that the very few cases of paralytic mydriasis, without cycloplegia, reported have not been accepted by all authorities and that Swartz, in particular, doubts its existence in hysteria.

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The contraction of the visual fields with dyschromatopsia and the other subjective findings mentioned demonstrated the existence of anæsthesia of the visual sense, partial in the right and complete in the left eye. Wilbrand and Saenger regard the objective value of the visual field in hysteria as inversely proportional to the amount of contraction, on the ground that the ability to simulate is directly proportional. This is undoubtedly true and corroborative evidence exists in the present case.

The character of the dyschromatopsia in the case is its most unusual and most interesting feature. As Parinaud states, "The chief characteristic of hysterical dyschromatopsia is that the field for red is the last affected." That there exists a dominant predilection for red in hysteric fields is generally accepted. Nevertheless, exceptions have been found and reported. Binswanger, for example, has observed cases in which the field for green exceeded that for red, and similar fields have been reported by Hochwart, Topalanski and Wilder, while Pansier has found the field for green the most peripheral. In these exceptional cases the field of the usually dominant color, red, was markedly contracted. In this case, compared with Landolt's normal color chart, the temporal field for green was within normal limits, that for red only moderately contracted and that for blue markedly contracted.

Harlan has classified hysterics with amaurosis as follows: those who deliberately simulate the blindness, those who see unconsciously but are incapable of conscious vision and those who are transiently absolutely blind. As this classification is frequently quoted it has evidently been generally accepted. There is no question that in the case under consideration, good vision by the left eye was present and that visual impressions reached consciousness and formed concepts, when the patient was unaware or unconscious that this eye was in use. If, therefore, this may be regarded as unconscious vision, the case belongs to the second class.

In its general aspect, the case is of interest not only because of the aggregate of hysterical manifestations and their long continuance, but, particularly, because of the bi-lateral nature of the affection which again reminds us of the resemblance of hysterical visual phenomena to the few recorded cases of crossed amblyopia from organic lesion.

THE DIAGNOSIS OF ACOUSTICUS TUMOR.*

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It may, perhaps, be a source of surprise that the diagnosis of acousticus tumor, a neurological topic, should be the subject for discussion by an otologist before otologists. It is, however, in the very nature of the symptoms of this disturbance that the reason for such a discussion lies. Cushing in his monograph states "the clinical diagnosis of an acoustic tumor can be made with reasonable assurance only when auditory manifestations definitely precede the evidences of involvement of other structures in the cerebellopontile angle." But the fact remains that in most cases of tumor in this region auditory symptoms do precede all others and it is because of this that these patients naturally present themselves first to the otologist. The experience of the last few months has further strengthened my belief that these cases are often seen first by the aurist and that he should be awake to the possibility of their occurrence. I have in mind four cases seen during that time each of whom gave a history of recent unilateral tinnitus of sudden onset accompanied by deafness. Testing these patients with the noise apparatus we could determine that they were totally deaf in the affected ear.

In none of them at the first examination was there any evidence, spontaneous or upon tests, of involvement of the vestibular apparatus. One case was a specific neuritis. The second case later developed signs of vestibular involvement, spontaneous nystagmus both lateral and vertical upwards with loss of caloric irritability of the affected side. There was also vertigo, headache, vomiting and choke disc. Here we were undoubtedly dealing with an acousticus tumor as operation proved. The nature of the other two cases has not yet been determined. In this connection, however, it must not be forgotten that auditory symptoms may precede by considerable time, even years, all other symptoms due to a cerebellopontile angle growth.

We expect with retrolabyrinthine disease an interval of time between the auditory symptoms and those arising from the vestibular apparatus. This is not always so and cases have been reported in which the evidences of eighth nerve involvement with angle tumor have resembled intralabyrinthine disease, i. e., auditory and vestibular symptoms have occurred simultaneously.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 22, 1918.

With regard to the spontaneous evidences of disturbance in the vestibular apparatus due to cerebello puntile angle tumors the most characteristic is the vertical nystagmus directed upwards. Recently I have observed that this phenomenon frequently requires that the vision of the patient be fixed upon the observer's finger held close to the patient's forehead. That is, if the patient be requested to look upwards the vertical nystagmus does not appear until the vision is fixed upon an object held close to his head.

Another curious phenomenon is the behavior of the caloric stimulation of the opposite, i. e., normal ear. Eagleton, in a paper on this subject has shown that in a case of bilateral deafness associated with brain tumor the hearing in one ear was restored by decompression. The vestibular apparatus of both ears, however, remained totally unirritable. It is strange that this loss of caloric irritability in the sound ear should so frequently be confined to the vertical canals. Whether this is due to pressure on the nerve itself or whether it is due to pressure on the pons is still in doubt.

Occasionally when the unaffected ear is irritable calorically the impulse aroused by caloric stimulation does not pass to its normal conclusion. Thus from caloric stimulation of the vertical canals I have seen, instead of a rotary nystagmus to the opposite side, a vertical nystagmus upwards and from caloric stimulation of the external canal an oblique nystagmus. Precisely what pathological nerval mechanism causes this transposition of impulses I do not know but I am sure that this phenomenon as well as a spontaneous vertical nystagmus upwards always indicate pressure on or actual involvement of the brain stem. They are never caused by a peripheral lesion.

I have presented merely a few points in the diagnosis of the condition from the otological side. I have not attempted a complete résumé of the symptoms.

Eagleton in his excellent paper on "The Importance of Aural Symptoms in the Early Diagnosis of Tumor of the Cerebellopontile Angle," makes the following statement, "I know of many instances in which after weeks and months of unsuccessful inflations and local treatments, the development of a papilledema has first called attention to the true cause of the deafness. It is in order to avoid such grave errors and with a full realization of the ease with which one may fall into such error that I have taken the liberty of again bringing this subject to your attention. The pathway to safety lies in painstaking examinations by tuning forks and in careful analysis of the reactions of the vestibular apparatus.

RELAPSING IRITIS.—REPORT OF A CASE WITH REMARKS.*

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RELAPSING, or recurrent iritis is one of the most difficult and unsatisfactory and difficult affections of the eyes with which we have to deal. The etiology is often obscure and the treatment not infrequently disappointing.

In presenting this brief paper and reporting in detail one very stubborn case, with remarks on the etiology and treatment of such cases, it is with the hope of shedding a little light on a dark subject, and incidentally to elicit a discussion in which the experience of the members of this society may be given.

Until recent years, the etiology of iritis and diseases of the uveal tract was indeed a beclouded subject; syphilis was given as the cause in the majority of cases, rheumatism as a causative factor came next; while gonorrhea, gout, diabetes, tuberculosis, scrofula, injury, etc., accounted for the remaining cases. Reber, Ophthalmic Record Bd. Bol. 25, page 225, in an article dealing with the etiology of iritis, after reviewing the statistics of numerous authors, based on clinical findings, and noting the wide discrepancies therein, came to the conclusion that these statistics amounted to "precisely nothing." While admitting the value of clinical findings and the history of the case, Reber strongly urged the use of modern laboratory methods, i. e., the complement fixation tests, and when indicated, the employment of the bacterins in the treatment. Many of the low grade inflammations of the iris, and the uveal tract are now known to be due to foci of infection of a septic nature, situated outside the eye, or to intoxication, as from the intestinal tract. As suggested by de Schweinitz, Campbell, and others, the old term "rheumatic iritis" should be given up, and the specific cause of the eye trouble should be sought, and if possible, eliminated. Of recent years, as evidenced by the extensive literature on the subject, a great deal of attention has been directed to focal infections, especially as regards the tonsils and the teeth. Five years ago, my attention was called to the importance of the teeth as an etiologic factor in such cases by three cases of low grade chroiditis which came under my observation, and in which no other cause could be found, except abscessed teeth and pyorrhea alveolaris. By removal of the foci of infection, all these cases made quick recoveries. These cases were reported in *Ophthalmology,* October, 1913. Since then, in all obscure inflammations of a low grade type, and without a definite history, I have gone carefully into the examinations for focal infections, also as to sources of autointoxication.

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The following case of relapsing iritis, or rather irido-cyclitis has proved the most intractable of any I have encountered, and because of the doubtful etiology, and unsatisfactory progress, it is reported in detail, together with the treatment that has been given. By way of foreword, I may say the following complement fixation tests have been made: (1) Wassermann, for spirocheta pallida, several times, always negative. Spinal puncture was not made, as the patient refused it, (2) for gonococci—negative, (3) Staphylococci—negative, (4) Streptococci—positive for the viridens type. Also examination for presence of the colon bacilli was made, their absence noted, and appropriate treatment given, after the method suggested by Dwyer.

Case Report.—Mr. S. J. D., age 28, consulted me, first, May 13, 1910, for an acute iritis in right eye, which was of one week's duration when he came under my observation. I found the pupil contracted and somewhat irregular, the iris muddy and oedematous in appearance, but only with a slight exudate present; anterior chamber deep, and aqueous hazy; marked circumcorneal injection and redness, and great pain and photophobia.

Family History:—Father died at age of 74 years, of cancer; mother died at age of 50, of Bright's Disease; one brother, older than himself, died of Bright's Disease, at age of 36; he had also suffered with "rheumatism," and had one attack of iritis one year before his death; another brother and sister have good health; the patient himself, though not robust, has enjoyed good health, never having had any serious illness.

There are no symptoms of syphilis unless the inflamed eye should be so considered. Many subsequent Wassermann tests have all proved negative; he has had two attacks of gonorrhea, but is apparently entirely cured of this, and subsequent complement fixation tests have proved negative. Radiographic tests of the sinuses have shown them to be entirely normal; urinary tests proved negative, except for excess of indican, now and again.

In the last eight years that the patient has been under my observation he has had ten attacks of iritis, first in one eye, and then in the other, until this last attack, when both eyes were involved, first in the right eye, November, 1917, which still continues, and the left eye, May 10, 1918, acutely following injections of streptococcus viriden. The shortest attack lasted ten days, and the longest eight weeks, previous to the present one which has now lasted for six months, and how long it will continue is apparently speculation. All former attacks have yielded to the usual local treatment of atropin, dionin, hot fomentations, leeches, etc., and to antirheumatics, given in full doses by mouth and by rectum in mucilaginous suspension. The patient has been to the hot baths in Michigan several times, and once to Arkansas. In 1913, while taking the baths in Michigan, for an attack of iritis, he developed in the fifth week of his stay, an acute arthritis in his left knee, the knee swelling to almost double the usual size, and has remained in this condition since, except for short intervals, though he has had hot air baths, and all other approved and non-approved antirheumatic treatment for same. Last year, 1917, following removal of submerged tonsils by my brother, Dr. George E. Davis, the swelling of the knee almost completely subsided within forty-eight hours, but inside of ten days the swelling returned, and so remains. I may say also in this connection that the streptococcus viridens injections have caused acute swelling in the knee, and rendered it painful.

Diagnostic tuberculin tests proved negative both for the von Pirquet, and subcutaneous injections of the O. T. solution, though the latter were carried up to 5 mg. During his present attack, examination of the bowel contents were made and absence of the colon bacilli detected; the reactions in this case were alkaline; after due prêparation, these beneficent bacilli were reimplanted, locally, and also the Bulgarian Bacilli were given by the mouth, and proper diet instituted, but all without benefit to the patient. During this last attack, when the antirheumatic and other treatment failed to give relief, and for diagnostic purposes, a course of mercurial inunctions combined with pilocarpin sweats was given for a period of four weeks, but without improvement of the condition.

The history concerning the teeth is of particular interest in this case, as a possible etiological factor. The patient, when fifteen years of age, had a swelling about a capped molar tooth on right lower maxilla. This swelling lasted two years, and subsided without treatment. Six years ago, after the patient had had two attacks of iritis, an abscess formed around this capped tooth, and the tooth was removed with a portion of alveolar process. The patient had no other trouble with the teeth until 1917, when he had one lower molar, left side, removed. This year, 1918, during the present attack of iritis, after consulting two competent radiologists, one of whom pronounced the teeth all right, but the other pronounced them diseased, the patient had two right upper molars, and one left lower molar, removed, and also a small piece of the root from the site of the right lower molar which had been removed six years previously, on account of abscess. Streptococcus viridens were found, and an autogenous vaccine has been given by-weekly, beginning with 2,500,000,000 initial dose, and carried up to 8,000,000,000. After these injections, the right eye had slight reaction, followed by some clearing; following the ninth injection, there was slight circumcorneal flushing in the left eye which had been quiet, and after the tenth injection, a decided reaction followed, with redness, pain, photophobia, lacrymation; and in two days, a very severe iritis developed in the left eye. The right eye had also become slightly worse, and injections were discontinued for one week, and then begun with the same size dose as the 10th injection which apparently had little effect upon the eyes, one way or the other. I may say that up to the beginning of this present attack of iritis, the vision had remained 20/15 in each eye, though in several former attacks, a descemetitis was present, but the deposits always cleared.

THE RESULTS OF AN EXPERIMENT IN CONTROLLING THE MILK SUPPLY OF A SMALL CITY.*

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THE New York (Geneva) Agricultural Experiment Station has spent much time and money during the past ten to twelve years in an intensive study of the sources of the bacteria which get into milk before it leaves the dairy farm. As in all similar experimental work, however, there has existed a need of testing the results secured under the conditions surrounding the maintenance of a pure bred Jersey herd at a State Institution under more typical dairy conditions.

We, therefore, have welcomed the opportunity to test our laboratory findings in a practical way which has been provided through the coöperation of our local health officials, two local milk companies and the farmers in the vicinity of Geneva. This coöperative arrangement was first undertaken in 1907 and continued until 1912. It was again established in 1915 and continues in force at present. The results of the original work are known to many of you, having been published some years ago[1]. It is of the more recent work that I wish to speak today.

Situation in Geneva. Geneva is a city of about 15,000 people, supplied with milk from 40 to 50 farms in the immediate vicinity. Some of the milk is sent in on trolley lines, but the larger part is delivered by the farmers themselves at the two pasteurizing plants located within the city limits. The morning milk is delivered within two to four hours after it is drawn, while the night milk is about twelve hours older than this. Since 1909, the larger part of the milk used in Geneva has been pasteurized and delivered by one or the other of these two companies, only two farmers having peddled their milk independently since 1915, and both of these having stopped delivery before September, 1917. This unusual situation has resulted in our having been entirely supplied with pateurized milk since September of last year, no raw milk being sold in the city except in special cases and on request of physicians.

No small part of the success which has attended our efforts has come from the cordial support given our work not only by the city officials and citizens, but also by the milk companies and farmers as well. In the earlier part of the work, such laboratory analyses as were made, were carried out entirely by members of the Experiment Station staff, but since July of last year the city has provided a bacteriologist who has worked under our direction.

Plan of Work. Before explaining the plan of work let me explain the ideal toward which we have been working. We have felt that the perfect milk supply is one where the milk at all stages in its journey from the cow to the consumer is kept as free as is humanly possible from (1) disease germs, (2) dirt, filth and like materials, (3) and from bacteria of all kinds. Finally (4) that it should have at least a minimum food value equal to that set as standard for the price paid.

This ideal requires that the milk be of good quality before, as well as after pasteurization, and that it be well cared for throughout its entire history. We do not believe that renovated milk should be sold under the same label as fine quality milk, even though it has an equal food value, and is equally free from objectionable bacteria. Needless to say our ideal has not yet been attained.

Our plan of work has been to attack the most important problem first, this plan being modified at times because of the lack of simple and effective control measures, or because the work involved a greater expense than available funds permitted.

Healthfulness. We have placed our main reliance upon pasteurization as means of keeping the milk free from disease causing organisms, and have tested the efficiency of pasteurization by conventional methods. Fortunately our pasteurizing plants are so well supervised that the majority of the samples of bottled milk give an agar plate count less than 10,000 per c.c., and it is uncommon to get a count as high as 100,000 per c.c.

Not content with killing disease germs, however, we have made an attempt to free our fresh unpasteurized milk from the commonest of all pathogenic organisms in milk, the pyogenic streptococci. In controlling the bacterial quality of the fresh milk by direct microscopic examination of dried and stained milk films, as we have, we early discovered that frequently the bacteria of the milk as it came from the farms were bacteria of this type. Thus out of 11,851 cans of milk examined we found 345 (2.91 per cent) to contain a predominant flora of long chain streptococci similar in appearance to the pyogenic streptococci, and in such abundance as to give a count of individual bacteria by the microscopic method in excess of 1,000,000 per c.c. These cans comprised one-fifth of all the milk brought to the city having a count as large as this. No other pathogenic organism has been identified in these microscopic preparations, and certainly no other one is present in such abundance.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 22, 1918.

Our reason for regarding the majority of these long chain streptococci as udder organisms is simply that we have never yet failed to identify an individual cow as their source in the numerous cases where search for their origin has been made. Our identification of the source has been corroborated in all cases by the disappearance of the streptococci from the mixed herd milk upon the exclusion of the milk of the individual quarters affected. Again and again, the streptococci have appeared in a single can of night milk and a single can of morning milk, a distribution which can hardly be explained if the streptococci were of fecal or other origin. Moreover, our associate chemist, Dr. J. C. Baker, has recently found that detectable chemical changes appear in the milk from infected udders, and these chemical changes are correlated with the presence of the streptococci. Frequently a simple notice to the dairyman that he probably had a cow with garget (mastitis) in his herd caused the disappearance of the streptococci, but in many cases the dairymen have been unable to find the offending animal, and it has been necessary to examine the milk of all the animals in the herd before the source of the streptococci was found.

Ought these organisms to be regarded as pathogenic in nature? Frequent direct and presumptive evidence connects them with pathogenic conditions. After recovery from an infection, we have found that cows may discharge streptococci in their milk for months and years without showing any clinical evidence of infection. Yet also we have found cows that have never shown any clinical evidence of mastitis in their entire history which show infections with streptococci[2]. Their abundance is conclusive proof that their virulence to man must be low or absent when taken into the stomach.

There are at least two possible explanations of these conditions. It may be that several distinct species of streptococci occur, some virulent, others not. Or it may be that this is an organism virulent only under special conditions, and possibly more virulent to cattle than men. Thus far no one has been able to give an entirely satisfactory explanation of the conditions present. Meanwhile, no farmer that we have met objects to discarding the milk of infected animals where the organisms are abundant or the milk abnormal in appearance. Occasionally we have detected very bad milk of this sort which was being sent to the city.

Plans are being made to attack the problem of excluding other pathogenic organisms from the milk supply, especially the tubercle organism, but as yet these are plans only. Meanwhile we place our chief reliance upon pasteurization as a safeguard against pathogenic organisms.

Protection of milk from dust, dirt and filth. I doubt not many of you are familiar with the fact that our experimental work has led us to conclude that relatively few bacteria get into fresh milk from dust, dirt and filth. Not that we conclude that these substances are therefore desirable in milk, but merely that the bacterial count is a very poor index to dirty conditions.

Inasmuch as there is an evident discrepancy between our conclusions in this matter and those of many other workers, it may surprise you to have me say that a careful search through the literature shows that the discrepancy exists largely in the conclusions and not in the data. All of the measurements of the effect of dust upon the germ content of milk previous to those made by Ruehle and Kulp [4] were, so far as I am aware, made by indirect methods. Without realizing it many investigators have made comparisons between units of measurement which were not comparable, and have been led to incorrect conclusions.

An example will suffice to illustrate the point. Russell[3] in 1893 made one of the earliest studies of the effect of dust on the germ content of milk and found by exposing gelatin plates in a dusty stable that at least 160,000 bacteria would fall into an open pail per minute. This sounds like a very respectable figure. This number of dollars would be enough to look good to most of us. It is little wonder that Dr. Russell and others who have obtained similar figures have concluded that dust was an important source of bacteria in milk. Nevertheless if these figures are transformed to the usual per c.c. basis the dust is found to be relatively insignificant as a source of bacteria. Five quarts of sterile milk could stand in an open milk pail continuously receiving rain of 160,000 bacteria per minute for more than five hours before the germ content would reach the 10,000 limit usually placed on certified milk. Compare this with the several hundred thousand bacteria which may be present in every c.c. of the milk of a cow infected with streptococci, or with the millions of bacteria which may be washed from a milking machine with every c.c. of milk which passes through it, or the million or more bacteria added to every c.c. of milk which is placed in an improperly sterilized milk can. It is little wonder that Ruehle and Kulp[4] found that dust did not increase in the germ content of milk as drawn more than average of twelve organisms per c.c., and that conditions must be intolerably bad to increase the germ content count as much as 1,000 per c.c.

Our direct evidence upon the number of bacteria added to milk from dirt and filth is not yet published, but indirect evidence makes it certain that the germ content is rarely increased more than 10,000 to possibly 20,000 per c.c. in very dirty milk. Under no conditions does this number approach the excessive numbers which may be added from the sources mentioned above.

The fact that relatively small numbers of bacteria get into milk from dust, dirt and filth does not make these substances any more desirable in milk than before, when we thought they were the chief sources of the bacteria. Cow manure in milk tastes just as bad as it did. I still prefer "clean milk to cleaned milk." But these results do show that the bacterial count is a poor way of measuring the effect of dirt and dust. Consequently we have experimented for some time with the well-known sediment test, and expect soon to put it into use as a control method. This in spite of certain shortcomings seems to be the most promising test that we have for the detection of foreign matter in market milk.

Control of the bacterial quality of milk before pasteurization. The most interesting feature in this experiment in city milk control has been a test of the microscopic method as a means of controlling the bacterial quality of the milk before pasteurization. Sole reliance has been placed upon this method of control, and a recent bulletin[5] gives an account of our results. Samples of milk have been taken at least once weekly from each can of milk brought in by the farmers. These have been brought to the laboratory, 0.01 c.c. of the milk withdrawn with a pipette, and spread on a glass slide, dried, stained and examined microscopically. Estimates of the number of bacteria present have been made and the milk graded on this basis as excellent, satisfactory, unsatisfactory and very unsatisfactory. Excellent and satisfactory grades were given those samples which would meet the bacteriological standards for pasteurization as Grade A milk established by the State Sanitary Code,—i. e., would give a plate count of less than 200,000 per c.c., or a microscopic count of individual bacteria of less than 1,000,000 per c.c.

By this grading we have found that about 86 per cent of the cans of milk examined were satisfactory for pasteurization as Grade A milk, while about 99 per cent would pass the standard set for Grade B milk. So far as published data is available for comparison, it appears that the bacterial quality of the milk received is approximately the same as that received at the Grade A pasteurizing plants sending milk to New York.

From the standpoint of work involved and results secured the grading of this milk has been accomplished much more easily and satisfactorily than ever could have been the case if the agar plate method had been used. One person working alone collected the samples and did all of the work connected with grading about 5,000 samples yearly, and worked only half time. I feel sure that one person could handle 10,000 samples yearly under reasonably convenient conditions, a record which any routine laboratory will envy. Moreover, the records of each analysis have been sent to the farmers on the day the samples were taken, and all preparations have been filed away so that any farmer could be shown at any time, the bacterial quality of his milk on any day when samples were taken.

The simplicity and relative inexpensiveness of any new method of laboratory analysis is not, however, the only test of its value. Are the results secured as valuable as those secured from counting agar plates? I want first to emphasize the fact that the results secured are quite different from those secured from counting plates. Exact counts of the bacteria are never made in the routine microscopic work as they are too time consuming, and relatively valueless. If necessary or desirable they can be made. The gradings obtained by the microscopic examination of the milk were compared with those obtained with the agar plates, and were found to show an agreement in 91 per cent of the samples[6], a fact which was very assuring as it indicates that no great error in judgment is made when either method is used for grading according to bacterial quality.

But far more important than the idea gained of the number of bacteria present, is the information secured from the microscopic slides concerning the types of bacteria present, and of the number and character of the body cells present. By means of these things and by supplementary tests made on individual farms we have secured information which confirms our laboratory findings regarding the sources of bacteria in fresh milk.

Thus far we have definitely found but four things which cause the presence of bacteria in numbers in excess of 1,000,000 individual bacteria per c.c. in milk less than 16 hours after it is drawn. (1) Udders infected with streptococci, (2) poorly washed milk cans, (3) poorly sterilized milking machines, (4) improper cooling. If these four things were under perfect control, the cans of milk brought into Geneva that had a bacterial count in excess of the figure named, would be eliminated or at least reduced to a very small figure.

With the facts available, in addition to the facts secured from the microscopic preparations, such as age and temperature records, it is proving increasingly possible for us to tell the source of the bacteria in any particular case merely from the samples themselves. Our records on the individual cans of milk is very helpful in this connection, for we are able not only to identify the types of bacteria present, but also know whether all cans contain excessive numbers of bacteria, whether the excessive numbers occur in night milk only, or whether they occur (as sometimes happens) in a single can of night milk and a single can of morning milk. In the latter case the bacteria are usually streptococci and the cause of the trouble is a single cow.

Food Value. Thus far we have not attempted to control the food value of the milk directly. For some time it was the practice of the companies to cut the price of milk containing less than 3.8 per cent fat, but since last spring the milk has all been bought on the 3.6 per cent basis regardless of the actual analysis. Some watering has been detected under these conditions and it will be necessary to establish a chemical control to protect the consumer. Dr. Baker's new test promises to be helpful in this connection as it is useful not only as a presumptive test for garget but also as a presumptive test for watered milk.

Conclusions. It will be noted that no reference has been made to dairy inspection in this discussion. We have felt that the thing of primary importance to the consumer was to make sure that the milk that he received was of good quality, and that from the control standpoint the consumers were little interested in the methods used by the farmer in getting good milk. It has always seemed to me that as an educational campaign, dairy inspection as carried out by the ordinary type of city inspector was a failure, and that the work of teaching farmers how to build their barns, and how to produce good milk was really a function of our State Department of Agriculture, our State Agricultural College and our Farm Bureau agents. Certainly dairymen listen much more respectfully to suggestions from these agricultural agencies than to those received from the usual type of dairy inspector.

In our work we have attempted to make the control established over the quality of the milk itself so thorough that poor quality milk could not pass without detection. Where poor milk was detected we have first used our best efforts to find the exact cause of the trouble before approaching the dairyman. As soon as the information was secured it has been given freely to the dairyman, and with surprisingly good effect. With no friction, this information has frequently been sufficient to correct the cause of the poor milk.

However a still more potent force in securing results has been payment for the milk based on its quality. Since April 1, 1915, the dairymen have been paid according to the bacterial rating given in the inspection work, and for part of the time, the fat test has also been made a basis for payment. The result has been that the continual loss to the men bringing poor quality of milk has caused some of them to take up other more profitable lines of farming. On the other hand the dairymen bringing the best milk have been encouraged to add to their herds.

Unfortunately the latter tendency has not offset the former during the unsettled business conditions of the past year, and we have lost more milk than we have gained. This has caused new troubles, as the companies have necessarily bought milk wherever they could find it, and some has been of poor quality. Consequently the improvement in the quality of the whole supply has not been marked.

Nevertheless, we feel that the only way in which to secure a permanent improvement in quality of any milk supply is to establish it upon a sound economic basis. Some improvement in milk quality can be brought about by legal compulsion, and some by moral suasion backed by judicious publicity, but in neither case do these secure permanent results. Thus far we have not used our legal powers in causing the rejection of poor quality milk. Experience may show this to be necessary in a few cases.

One objection which may be raised against this type of control work where the emphasis is placed upon the quality of the product itself, is that it requires experienced administrative officials and trained laboratory analysts. The seriousness of this objection remains to be demonstrated and gives good reason for continuing the experiment, planned as it is along lines which are more or less untried. Certain it is that a control based primarily on laboratory findings has many desirable features. When the administration of the regulations is based on business principles there is a removal of much of the friction and ill feeling frequently prevalent between dairymen and inspectors. We have been received as friends by the farmers for the system of payment based on quality, has had their support, and naturally they have welcomed any efforts on our part to make it possible for them to secure the best market prices for their product. Likewise we are fortunate in having our milk companies managed by men who are proud of the good showing that they have made and who are eager to correct any trouble for which they are responsible. Perhaps, however, the cordiality with which we have been received by both farmers and milk companies is based more largely than they have realized upon the fact that we have never asked them to make changes until we had analytical data in which they had confidence showing exactly where their trouble lay, and also data showing what improvement in results could be secured by making changes. In other words, we have approached them on a basis which a business man understands.

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THE TRANSMISSION OF DISEASES OF CATTLE TO MAN THROUGH MILK.*

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THE part I have been asked to take in this symposium is to discuss the transmission of the diseases of cattle communicable to man through the medium of milk.

The human species is susceptible to several of the specific infectious diseases of cattle such as tuberculosis, aphthous fever or foot and mouth disease, cowpox, anthrax, rabies and actinomycosis. Furthermore, certain forms of mastitis, acute croupous and hemorrhagic enteritis, septic metritis and other suppurative lesions in cattle are caused by bacteria which may be pathogenic for man. The investigations that have been made concerning these diseases show that, with some of them, the virus is transmitted through the milk, and with others, the human infection takes place otherwise. With all of them, there are ways other than by means of the milk for the virus to pass from the diseased cow to the human subject.

The conditions under which the viruses of specific diseases of cattle enter the milk, and the effect of the diseases upon it, constitute an important part of milk hygiene. The specific organisms of some of these maladies may be carried by the blood to the udder where they pass directly into the milk ducts to be eliminated with the milk, or they may escape through one of the other channels of elimination and enter the milk after it is drawn. There is no doubt as to the extent to which pathogenic bacteria pass directly from the blood stream into the milk ducts when the udder itself is not the seat of lesions. When it is affected, as in case of tuberculous mastitis, the presence of the infecting organisms in the milk is assured, though perhaps not continuously. When bacteria invade the udder through the teats, as in case of many non-pathogenic bacteria and also with the bacillus of abortion, they escape with the milk.

Another point worthy of much consideration in connection with milk infection, is the effect of dilution. The milk from a diseased cow may be very infectious by itself but when it is mixed with that from a number of healthy cows the virus may be so diluted as to render it innocuous. The sanitary significance of diluted, infected milk depends in part on the proportion of milk from diseased cows to that from healthy ones, in part on the ability of the organisms to multiply in the milk, and in part on the temperature at which the milk is kept. Thus, a few anthrax bacteria in the milk would be enough to cause intestinal infection. If there were not enough of them to infect and if the temperature at which the milk was kept was high (60 degrees to 70 degrees F.), they would multiply rapidly so that in a few hours it would be highly infectious. On the other hand, tubercle bacteria would not multiply and consequently the milk would not be more infectious than at the time it was drawn.

In earlier times, anthrax, or charbon, seems to have been transmitted to man quite frequently and at present it is occasionally found in the human subject. In most cases, however, it is the result of accidental inoculation, rather than from ingesting milk from infected cows. Most cattle affected with this disease develop a high temperature and the milk secretion is reduced promptly. The literature shows that anthrax bacteria do not appear in the milk of affected cows until just before death when it is obvious that the animals are in a serious condition and the milk would be rejected. Our experience confirms this conclusion. In one outbreak, we studied this phase of the disease carefully but were unable to find the bacteria in the milk until either just before or soon after the death of the cows. In this instance, about fourteen animals died and for three weeks after the first case appeared, and before the diagnosis was made, the milk from the herd was retailed in one of our cities without injury to the consumers. Three men who cared for the cattle developed malignant pustules due to infection from skinning the first animal that died.

While anthrax bacteria are eliminated rarely with the milk, they are often present in the bloody, intestinal discharges. This affords opportunity for their entrance into the milk not only of the infected cows but also in that of the as yet healthy individuals in the herd.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 22, 1918.

It may be of interest to add, that anthrax is a more widespread disease than is generally supposed. In 1903, it occurred on 84 different farms in one county of this state causing the death of 33 horses, 123 cattle, 11 sheep and 3 hogs. I have no knowledge of any human cases. During the last ten years we have diagnosed anthrax in sixty-six different localities in New York State and most of them are in dairy districts. Because of the persistence of the spores, it is liable to reappear at any time. The veterinarians in these localities are acquainted with the facts and are on their guard to diagnose the disease promptly and to check its further spread. Animal owners are often slow to call veterinarians and a situation arises, as in the outbreak mentioned, where the disease was found in the cattle because the infected men became frightened and consulted a physician who caused an investigation into the health of the animals. Judging from our experience and the very few reports that have been made, the danger of milk infection with anthrax is not large.

The disease communicable from dairy cattle to the human family about which more people are interested, is tuberculosis. The intensity of feeling on this subject by many sanitarians and the findings of research workers have been somewhat confusing. The fact seems to have been established that young children are susceptible to bovine tubercle bacteria but that adults are not, and further, that this infection usually takes place through the ingestion of infected milk. There are, however, several cases of local infection in man by direct (accidental) inoculation.

The topics of interest in connection with the transmission of bovine tuberculosis to the human subject are (1) the frequency with which tubercle bacteria appear in milk, (2) the conditions under which the milk becomes infected from the diseased cows and (3) the prevention of the contamination of milk with tubercle bacteria.

There appears to be a dearth of recent reports on the presence of tubercle bacteria in market milk. Formerly, a number of investigations indicated that they were quite numerous. Thus, in 1906, Anderson examined 233 samples of milk in Washington and found tubercle bacteria in 6.72 per cent. Campbell, in 1908, found 13.8 per cent of 130 samples of raw milk infected. He also found 1 out of 12 samples of milk sold as pasteurized milk containing virulent tubercle bacilli. Hess, in 1909, found tubercle bacilli in 16 per cent of the samples examined in New York and Tonney found 10.5 per cent of the samples of Chicago milk infected. In England, France and Denmark examinations have also shown high percentages of infected milk.

In this connection, the question of dilution and the number of tubercle bacteria necessary to cause infection are of interest. It was shown by Ostertag and others that two and one-half million times more material is required to infect an animal by feeding than by inoculation. Schroder and Cotton found that milk which would produce tuberculosis in guinea pigs when 5 c.c. were injected into the peritoneal cavity could be fed 30 days without producing the disease. Findal, Reichenbach and Alexander, as cited by Ostertag,* found that at least 400,000,000 tubercle bacilli are necessary to produce infection in guinea pigs when fed in a single dose and that 800,000 given 50 times by the mouth are not certain to produce infection. Ostermann reports that milk containing 1,000 bacteria per cubic centimeter may be repeatedly ingested without effect. Flügge and his co-workers found that a few tubercle bacilli are sufficient to produce tuberculosis when injected into a guinea pig, 200 are necessary when they are inhaled and 140,000,000 when they are ingested. There is no way of estimating the number required to produce infection in the human cases.

A large number of examinations have been made of the milk from individual tuberculous cows. Ernst found 27.7% of the samples of such milk to contain tubercle bacilli microscopically and 42.8% by animal inoculation. M'Fadyean and Woodhead found the milk from fourteen out of nineteen tuberculous udders positive. Two out of thirteen cases were positive when the udder was not found to be affected. Rabinowitsch and Kemper report that 71.4% of tuberculous cows examined gave milk containing tubercle bacilli.

In many of the earlier examinations reports are not conclusive regarding the condition of the udders from which the milk was obtained nor the extent of the disease in the cattle. In 1907, we† made examinations to ascertain how frequently tubercle bacteria appeared, first in the milk of herds containing reacting animals and secondly, to what extent reacting cows with sound udders were eliminating the organisms. The results showed that of forty-nine samples of mixed milk, acid fast bacteria, resembling those of tuberculosis, were found microscopically in one specimen and guinea pigs inoculated with the mixed milk from two herds which contained advanced cases of tuberculosis developed the disease. After the physical cases were removed further inoculations gave negative results. Of the eighty-seven examinations of the milk from individual cows, tubercle bacteria were not found either microscopically or by guinea pig inoculation except in two cases and where the cows had infected udders.

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* *Zeitschr. für Fleisch. u. Milchhygiene,* Vol. XXIII, No. 2, p. 27.

† *Jour. Med. Research,* Vol. XXIV (1911), p. 517.

The preliminary examinations mentioned were followed by a very thorough study by Peterson * on the elimination of bacteria in the milk and excreta of reacting cows, which exhibited no evidence of disease. The examinations were repeated frequently, over a period of several months, to ascertain whether or not in such animals the specific organisms were eliminated intermittently. The milk of nine reacting cows was examined, both microscopically and by guinea pig inoculations. Peterson drew the following conclusions from his studies, namely:

"1. The tuberculous cattle examined that were apparently sound but which reacted to the tuberculin test did not eliminate sufficient tubercle bacilli to cause the death of experimental animals when injected with their milk or excreta or for the same to be demonstrated microscopically.

"2. The animals that showed marked physical signs of tuberculosis eliminated tubercle bacilli in sufficient numbers to be detected microscopically or by animal inoculation in a large percentage of samples of milk or excreta taken at regular intervals. Single examinations of the milk or feces might give negative results. A significant fact brought out in this work was that while many of these animals did not contain the organisms so long as lesions did not appear in the udder and there was no evidence of intestinal or lung infections that when the cows developed pulmonary lesions tubercle bacteria appeared in their sputum and the feces contained the organisms in sufficient numbers to kill guinea pigs inoculated with them. We have found very small tubercles discharging into the bronchioles and also into the trachea. This shows the possibility of tubercle bacteria gaining access to the milk of cows suffering with pulmonary or intestinal tuberculosis and whose udders are not infected."

Ostertag tested the milk of 49 non-clinical reactors and not a single sample produced tuberculosis when injected into guinea pigs. Later, in conjunction with Brauer, he made a thorough test of the milk from ten non-clinical reactors with negative results. O. Müller made inoculation tests on guinea pigs with the milk of nine non-clinical reactors, and Asher with the milk from seven and tubercle bacteria were not demonstrated in a single case.

The investigations of Theobald Smith, later confirmed by Koch, pointed out the difference in virulence between the human and bovine tubercle bacteria. The British Commission, after more than ten years of work, concluded that "There can be no doubt that a considerable proportion of the tuberculosis affecting children is of bovine origin, more particularly that which affects primarily the abdominal organs and the cervical gland, and further, there can be no doubt that primary abdominal tuberculosis, as well as tuberculosis of the cervical glands, is commonly due to ingestion of tuberculosis infective material." The Commission studied 108 cases of tuberculosis in man other than lupus and found bacilli of the bovine type in 24 or 22 per cent of the cases.

The German Commission made a study of 56 different cultures obtained from cases of tuberculosis in man and found 6 or 10% to be of the bovine type. Park and Krumwiede determined the type of tubercle bacteria in 487 cases of tuberculosis in man and collected from the literature the records of 1,033 cases in which the type of the organisms was determined by others, giving a total of 1,511 cases. There were 595 cases in individuals over 16 years of age, 177 in children between 5 and 16 years, and 368 in children under 5. Tubercle bacteria of the bovine variety were found in 35 per cent of the cases in children between the ages of 5 and 16, and in 26 per cent of the cases in children under 5. In addition to these they found 11 cases in which both types of bacilli were present.

Although there were many cases of human tuberculosis on record where the source of infection seems to be traced directly to infected milk, in a majority of them it is not possible from the records to eliminate human infection. However, Webber and Ungerman * found 69 cases of udder tuberculosis concerning which the information desired could be obtained. Three hundred and sixty persons, including 151 children, used milk from tuberculous cows. Two boys were affected with tuberculosis of the cervical lymph glands in which bacilli of the bovine type were demonstrated. Six other children and one adult were found with swelling of the cervical lymph glands. Four children and one adult showed symptoms indicative of abdominal tuberculosis and one child suffered from scrofula, but in these cases no material could be obtained for a bacteriological examination. Forty-one other persons showed various symptoms of disease, but tubercle bacteria could be demonstrated in only four and these were of human type. The other 304 individuals who had used milk and milk products made from these infected cows showed no symptoms of disturbed health in from 1 to 5 years.

While there is no longer any question about the infectiousness of milk from cows having tuberculous udders, there are contradictory views relative to the possibility of tubercle bacteria gaining entrance to the milk through sound udders. Ostertag and Prettner injected

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* Report N Y. S. Vet. College, 1909-10, p. 65.

* Cited by Ostertag. *Zeitschr. für Fleisch u. Milchkhygiene*, Vol. XXIII, No. 2, p 26; Vol. XXIV, No. 6, p. 123.

tubercle bacilli intravenously into cows with sound udders and found the milk to be non-virulent when inoculated into guinea pigs. We have confirmed these findings in two cases. Milk, however, may be infected secondarily when it comes from cows suffering from open tuberculosis of the lungs, intestines or uterus. The fact that cows swallow their expectoration permits the presence of the organisms in the fecal matter of such animals and, under insanitary conditions, the milk may become infected indirectly from these sources. There is a large literature on this phase of the subject and as yet there are many points relative to various findings that need to be confirmed before much seriousness can be attached to the infectiousness of milk from animals with sound udders and without clinical evidence of tuberculous infection. The greatest obstacle in the eradication of bovine tuberculosis is the rejection of the milk from reacting cows that are free from symptoms or other clinical evidence of disease and at the same time accepting the milk without question from herds that have not been tested.

Aphthous fever or foot and mouth disease is another disease affecting cattle, the virus of which is sometimes transmitted to man through the milk. The cause is a filterable virus. As this disease does not now exist in the United States, it is of little general interest to us. The fact, however, that on several occasions there have been serious epizootics of this malady extending over large territory in the United States and in each of which a few people were reported to have been infected, warrants our giving it passing notice. Nocard found that the virus does not exist in the milk as it is secreted but that it becomes contaminated from the vesicles on the exterior of the teats and udder. A mere trace of the serum from the lesions on the skin is sufficient to render from 50 to 100 quarts of milk infectious. Furthermore, the extraordinary facility with which the virus of this malady is disseminated renders it highly probable that all of the milk from a herd in which it exists may be infectious.

The virus of cowpox, the micrococcus causing furunculosis of the udder, the virus of rabies and the ray fungus of actinomycosis and the bacillus of milk sickness, or trembles, are infectious for man. The evidence, however, is not conclusive that infection takes place through the milk. Cowpox is contracted by milking cows suffering from this disease. The presence in the milk of the virus of rabies has been asserted by a number of writers but its danger is not great. One cannot deny, however, that infection might take place after the ingestion of milk from rabid cows, providing there were trauma of the mucous membrane of the digestive tract. There is no evidence to lead one to believe that the virus of rabies is commonly transmitted in this manner. Actinomycosis is transmitted with difficulty even by inoculation unless the young growing fungus is introduced into the living tissues.

There has been more or less evidence accumulated that the streptococcus of septic sore throat may come from certain forms of streptococcic mastitis. On this point, the evidence seems to be quite as conclusive that the incriminated organism is of human origin and that the milk became infected from the throat of an infected person.

The bacillus of infectious abortion in cattle is found in the milk of a very large percentage of cows infected with that trouble. This has given rise to certain speculations in regard to its effect on the human species. A few articles have appeared calling attention to the significance of this organism as a factor in human medicine but, so far as I am able to find, there are no authentic cases on record where the Bang bacillus has been shown to be the cause of abortion, metritis or sterility in the human species.

Finally, there seems to be little danger of human infection with specific diseases of cattle through the medium of their milk. The safeguards surrounding milk hygiene are steadily reducing these dangers to a minimum. However, special care to protect the milk should be exercised whenever the diseases mentioned appear among the cattle in any locality. This requires full coöperation between the health officer, the physician and the veterinarian.

Discussion.

Dr. Halsey J. Ball, Glens Falls, N. Y.: While I feel that I have not had sufficient experience to discuss these papers there are certain things that I have observed in epidemics in connection with milk, that I would like to have explained. First, in regard to infantile paralysis. During the 1916 epidemic, there came under my observation a number of cases in central New York, about two hundred fifty miles from New York City, that suggested to my mind the possibility, if not the probability, that the infective agent was transmitted by milk.

The first case in that locality was that of a woman residing on a dairy farm, who was in the habit of exchanging, during milking, the covers on the milk cans coming back from a milk station, supplying milk to the Infant Welfare Stations in New York City. This woman, previous to the onset of her illness had only been away from the farm twice in two months. The first time about three weeks before the onset, when she drove about six miles across country to a farm on which there have been no cases of infantile paralysis. The second time was the day before the onset, when she made a few purchases in the stores at Cortland.

A careful investigation at the time excluded the possibility of her having come in contact with a case of infantile paralysis, or the probability of her having come in contact with a carrier, and inasmuch as the dirty bottles were returned to the milk station from the infected district in New York City, and flies could have transmitted the ineffective agent from the bottles to the covers of the milk cans handled by the woman, I am of the opinion that the infective agent was transmitted by milk and flies.

Early in September four cases occurred on an isolated farm, about six miles from a milk station, selling milk to New York City. In this family there were six children who were kept at home by fear of the epidemic until September 1, when two of the boys began drawing milk to the milk station. Ten days later I made an investigation at the farm, and found one of the boys who had been drawing the milk, dying, another child had had a mild attack a few days previous, another child had been taken ill the day before, and still another child had the initial symptoms while I was at the farm.

Investigation failed to show the possibility of infection excepting through the handling of the milk cans returning from New York.

During the outbreak, I investigated nearly every case in Cortland county, and in every case, excepting those previously described, it was ascertained that the person having the disease, whether a child or an adult, had eaten an ice cream cone, procured at a fair ground or grocery, where flies had access to the ice cream cone. Again a combination of milk and flies. An interesting coincidence was that the cones, in use in that locality, were made in Brooklyn.

In regard to septic sore throat we had in the city of Cortland, about seven hundred cases between April 23 and May 6, 1913. This outbreak came from one dairy, and was controlled as soon as the sale of milk from that dairy was discontinued. An investigation disclosed only one case of sore throat on the farm producing the milk, and that case was subsequent to the outbreak. It was found, however, that just preceding the outbreak, the farmer had a severe infection on his hand, from a pistol shot wound. I would like to know if it were possible that the infecting agent transmitted by the milk, came from the wound in the man's hand.

In regard to the last paper: The people are not yet ready for compulsory pasteurization. I had this forcibly impressed upon me after the outbreak of typhoid fever in Millbrook, Dutchess county, last year. There had been nineteen cases of typhoid fever, with one death. The outbreak was controlled by compulsory pasteurization of all the milk supply of the village. But as soon as the carrier was found, the local Board of Health rescinded the ordinance, although a majority of the board were personally in favor of continuing pasturization, on the ground that people preferred raw milk. They also gave as their opinion that the majority of the people would purchase raw milk in preference to pasteurized milk, if can milk could be produced for one cent a quart less.

Dr. Eliza B. Mosher, Brooklyn: I would like to report three cases of tuberculosis of the abdomen which occurred in the family of a former patient of mine, living in an adjoining State, and which came under my personal observation. The milk of a small but *supposedly* desirable herd of cows had been given very freely to all three children of this family.

Case 1. A girl of seven came home from school ill. The family doctor was called. Before he could make a diagnosis the girl became unconscious. As the abdomen was somewhat rigid and distended he suspected appendicitis, and she was at once taken to the hospital. The abdomen was opened, and found everywhere studded with tubercle nodules, one of which located upon the caesum, had broken down, causing a perforation of the intestine. The girl died. On the day previous to the funeral her brother, aged five, an apparently healthy boy, became ill with vague symptoms but no signs of abdominal disease. He was seen during the next few days by one of New York's well-known children's specialists, and later by a noted surgeon. No diagnosis was arrived at, except that the cause of sickness was probably located in the abdomen, and might be tuberculosis. He died at the end of one week, and the post mortem showed an abdomen lined with tubercle nodules. The third and only surviving child was three years of age. She was examined under chloroform anaestheia by a noted specialist in tuberculosis, who was able to demonstrate nodules beneath her abdominal wall. The family at once moved to a higher altitude, changing her surroundings completely, and she was given tuberculin injections upwards of a year. The reaction was positive during the first months, when it finally ceased. She grew robust, gained normally in weight and size, and up to the present time seems to have been cured. Through investigations made it was discovered that one cow, in the small herd from which the supply of milk that the family had used in large amounts had been obtained, had a cough—lost flesh and was sold to a butcher, "who found the meat unhealthy." The cows had not been tuberculin tested.

It was unfortunate that further data could not have been obtained regarding this milk, but as no other source of contagion, common to the three children, could be discovered it was thought that the milk used was a reasonable solution of the problem.

Dr. B. R. Wakeman, Hornell, N. Y.: From a public health standpoint, our only interest in milk is that it is a vehicle for the transmission of disease. What can we do to prevent this transmission of disease through the milk? We can instruct the personnel of the daïry and look them over to see that they have no communicable disease. That is the ideal, but impracticable way to solve this problem. We can have the veterinary look over the cattle frequently to prevent disease being transmitted to the human from that source. That is also ideal but impracticable. We can overcome defects of the personnel of the dairy and cattle of the dairy by pasteurizing the milk supply. We should not stop here. We should see that the persons looking after the pasteurization plants are free from disease and the milk is properly sealed and properly handled until it reaches the consumer.

Now, our function in public health work is to prevent the transmission of disease. I think it can be done by pasturizing the milk, but we should not stop there. We should look to the consumer and after the persons managing the pasteurizing plants. That is as far as we can go in public health matters. Of course, from the point of cleanliness of the milk, that matter can be carried out by educating the farmer. The milk inspector can do a great deal if he has a good personality, and can work to great advantage. If the farmer has a clean stable he is very apt to have a clean cow.

Dr. Charles C. Duryee, Schenectady, N. Y.: With regard to the question of the pasteurization of milk in the city, the gradual and commonsense methods of educating the people has been spoken of. In that regard I would like to give an instance of the ultimatum in Schenectady. Two or three years ago an order was passed that the milk should be bottled. A day was placed for the ordinance to take effect, and it was generally complied with, although the bottles were frequently dirty, and in one or two instances caused infection. Later on the milk authorities, or rather the milk inspector, decided that there should be a standard, pasteurized milk, and the idea was to use force. With the consent of the health officer, an ordinance was passed that required that the first of July last year all milk should be pasturized. There followed meetings of the Medical Society, in which several men opposed it very much and a campaign was inaugurated to educate the people. An exhibit was held and the result was that a move for the pasteurization of milk in the city began, and some of the milk dealers complied with the regulation. A temporary injunction was placed on the city, which was subsequently made permanent. The final result has been a constant increase of the use of pasteurization.

Notwithstanding the fact that the growth of the pasteurization of milk has steadily increased and conditions improved, it is my opinion that one of the best methods to secure the use of pasteurization is to demonstrate what contamination is carried in ordinary milk. We had an exhibit, which included a clarifier, on the main street, which lasted for about a week. This went a great way to show that pasteurized milk was essential.

I think with regard to milk epidemics, that we do not give sufficient attention to the men who handle the milk. I believe that when some method has been perfected whereby the milk will be protected from infection by those handling the milk at the time it comes from the dairy up to the time it reaches the consumer, at least, to the time it is taken from the bottle, we will have very few diseases caused by milk transmission.

Dr. Robert S. Breed, Geneva, N. Y.: Apparently, I didn't make certain qualifications distinct enough, judging from the discussion. In the first place, in the title I was careful to speak of the fact that Geneva was a small city. This whole study has been used and carried out as an experiment, because we felt that there were differences of opinion in regard to some of these matters, and we wanted to get evidence to show the truth of the matter. The problem of the control of the milk supply of a city like Geneva is very different from the control in large cities.

In regard to making counts from the smears, we don't ordinarily make exact counts, but they can be made in cases where they are desired. Further, in regard to that, it seems to me that the counts by the microscope, from a legal standpoint are better than estimated counts made by the plate method. That, however, brings up the question as to whether the microscope will give an accurate count. In co-operation with the Cornell Experimental Station, we are trying to determine whether the agar counts or the microscopic counts are the more accurate. As a matter of fact we have no absolute standard for comparison, and presumption is as much in favor of the accuracy of one count as of the other.

After carrying out a series of comparative analysis of samples of market milk at Ithaca and at Geneva, we have come to the conclusion that we cannot learn very much about the accuracy of the counts in that way. We therefore tried analyzing samples inoculated with the colon organism, choosing that organism deliberately because it is an organism from which we could expect to get reasonably accurate plate counts;

likewise, from a microscopic standpoint it is a favorable organism to work with. We prepared nine samples of milk inoculated with colon bacilli in such a way that the counts would, if correctly made, give the ratio of 1:2:4. Six men made both microscopic and plate counts. All of the counts of duplicate samples agreed well with each other and the ratio found agreed well with the ratio expected. Wide discrepancy in counts, such as commonly occur where duplicate samples are analyzed in different laboratories, were eliminated. A preliminary account of these tests was published in the *Journal of Dairy Science*, last fall.

As for our differences of opinion in regard to the value of dairy score cards, there again, I feel that our differences give us good reason for study along this line. I feel that these differences of opinion will disappear as knowledge increases. We will have fewer difficulties between the dairy inspector and the farmer if we deal fairly with the latter. In our inspection work, when we find that a sample of milk has a great number of bacteria in it and tell the dairyman about it, he frequently says, "Oh, that is because I haven't white-washed the barn this year." They frequently are so convinced of the truth of this or some other equally improbable assumption that they will not listen when we tell them it is their milking machine, milk cans, etc., that are at fault. When we have exact information and can go to them with this accurate information we can control these matters very much better.

There is another matter that I would like to mention in regard to the question of inspection work in a city where the milk is largely pasteurized milk, as in New York City. As a matter of fact, I think all will agree that the distributors have found the microscopic method a useful method in keeping the quality of milk within the standards set by New York City for milk before pasteurization.

There is one question in regard to the public health in Geneva which I overlooked in answering the questions. The matter of typhoid has interested us very much and we have studied the typhoid statistics since 1909 and find that the presence of typhoid is co-related with the condition of the water supply; and as far as we can discover there is little or no evidence of connection between typhoid and the milk supply. The question of the relation of infant mortality to the use of pasteurized milk is being worked out at the present time, but the complete pasteurization of the city milk supply has been going such a short time that no conclusions of value are available as yet.

THE TREATMENT OF NARCOTIC ADDICTION.*

By CHARLES FRANCIS STOKES, M.D.,
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IN order that a clear insight may be had into the problem under consideration, it would seem that the approach should be made through the avenues of biology and evolution. The trend in animal life is not only toward the preservation of the species and propagation, but toward betterment as well, in order that adjustment to changing environmental conditions may be adequately accomplished. To this end man has evolved higher centers of control, which have led to the growth of nervous tissue, the cerebrum, a pabulum in which the intricacies of intellect are elaborated in the struggle to gain mastery over and direction of instinct to the accomplishment of the greatest effectiveness. In the development of this process the pain-pleasure principle was evolved, which, in simple terms, means that instinctive action directed toward the great triple goal, propagation, race preservation and race betterment, awakens "feelings," emotion, which we recognize as pleasurable; on the other hand, action in conflict with this great aim, at any level, or, to any degree, is recognized as painful. The one, is the emotional safety signal, the other, the danger sign. Sensory impulses both from within, and without, are painful, or pleasurable, as the case may be. Thus a deceased, or disordered organ, may divert a measure of attention to problems within thereby splitting off conscious action, in varying degrees, from the main end. It is obvious that pain-physical is thus awakened. The remainder, or balance of effort, unless fortified by compensation, or in other ways, is incapable of accomplishing adjustment to conditions without, and feelings of pain follow this consciousness of inefficiency. The pain-pleasure principle plays a vital part in life, and bears directly upon the problem in hand. Moore epitomizes the situation as follows:

"We have seen that the most primitive kind of pleasure and pain is probably pleasantness and unpleasantness. Corresponding to this we have found that the nervous basis of pleasantness and unpleasantness is not a specially evolved system of nerves but some characteristic of nervous impulses in general. The more special states of bodily distress, and gratification, seem to have a particular connection with the automatic (vegetative) nervous system, which forms such a conspicuous feature of the inner body. Surface pain and tickling are seen to depend on the distribution of special nerves throughout the skin. These nerves group themselves into very definite paths in the spinal cord and communicate finally with the thalamus of the brain, which is the center at which all variations of our affective (feeling) life are brought to a focus."

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 22, 1918.

In the elaboration of intellect, pain-perceiving centers have been projected into the cortex from the thalamus, and thereby a more highly sensitive mechanism of adjustment has been evolved. It has been found that in certain diseases, and disorders, *within,* and contacts and traumatisms from *without,* a degree of pain is sometimes awakened that baffles efforts to accomplish security for the individual. An agent was sought which would slow down, depress, inhibit, metabolic activities in the pain-perceiving centers of the brain, in the hope, that by thus blocking off pain, without materially interfering with function at other levels, the health balance might be re-established. Opium and its derivatives in medicinal doses in suitable cases appear to accomplish the end sought. The action is a biochemical process. In the absence of pain through the medicinal use of narcotics the pleasure side is released. Opium follows the "law of dissolution" in its pharmocological action, depressing brain functions in the reverse order of their evolutionary development. When the dosage of narcotics depresses metabolic action *beyond* the pain-centers of the cortex, the pleasure side is inhibited, and if extended further, coma and death may be induced.

In accordance with pharmocologic and biologic law, metabolic excitations on sharp withdrawal or cessation cause the pendulum to swing in the opposite direction and we have evidences of depression. On the other hand, agents which *depress* function, on withdrawal, induce a back-sway in the nature of excitation, and we have the excitation of release, counterfeit stimulation.

In the case of opium we have found that function was depressed in the reverse order of evolution; on withdrawal we observe that the excitation of release follows the order of evolutionary development, with the focus of the vegetative nervous system in the thalamus, in the foreground, *dominating* the clinical picture with the profound emotional manifestations of fear.

Kraus contends that the effects of opium in addiction are central depression with inhibition of function as a peripheral manifestation.

The clinical picture coincides admirably with the pathology. The functions of the ductless glands are inhibited in varying degrees, and as might be expected, there is relative and proportional disturbance in metabolism and nutrition in subsidiary organs and systems of organs. The vagus nerve has been found by Sollman to be less involved than the others.

If it is true that abstinence symptoms are due to the excitation of release, centered, primarily, and conspicuously, in the thalamic focus, cortical extension, and the expansions of the vegetative nervous system, as shown by the sharp output of adrenalin with its correlated and subsidiary functional activities, then the indications at the outset are to check the swing of the pendulum at the mid-line, holding back adrenin by blocking the sympathetic, and maintaining the balance by playing up the vagus. Crile has shown that a moderate single dose of morphine will block the sympathetic. The vagus is the normal antagonist of the sympathetic. Hess, Eppinger, Biedl, and Falta have shown that in pilocarpine and eserine, we have pronounced vagus excitants. I have demonstrated clinically, that except in a small percentage of complicated cases, narcotics may be abruptly withdrawn with little or no distress, and immediate cessation of "craving," by the use of pilocarpine and eserine. The medicinal treatment of addiction the details of which have been set forth by me in other papers, must be regarded merely as preliminary treatment. After the prevention, or the subsidence, of crises in the emotional zones, we have to take into account disturbances at other levels. For example, in untreated cases we have abstinence manifestations in the respiratory center—sighing, hiccough, gaping, sneezing; in the spinal cord—cramps, twitchings, aches and pains; and in the cortex, hypersuggestibility, insomnia and other manifestations of excitation. The rebound of function in the periphery is striking, particularly in the vegetative nervous system. No medication is indicated here as the physical balance is soon re-established. Hyperactivity of the gonads is manifested by erotism and pollutions.

Under the treatment employed by me, the balance in the nervous system is delicately adjusted. The hypersensitive receptors, however, if excited, even moderately, may call forth excessive response at many, or all, levels. Therefore, complete rest, quiet, with psychic and chemical sedation, should be the plan of treatment for the middle period of the after-care.

It is plain that chronic inhibition of perceptual functions must involve memory and prevent the development of action-patterns the operation of which in the normal is substantially automatic. The mental attitude and behavior during convalescence are thus explained. Re-educational methods are indicated. Behind all, the crux of the situation is the bringing to light of the underlying primal conflict by mental analysis. Unless this is accomplished the tendency to relapse is ever present, for in these cases we are dealing with individuals who, in the majority of instances, have failed to adjust to reality by reason of conditions in conflict with the normal drive toward the great triple goal, and who suffer in consequence from varying shades, hues, and correlations of pain, such as fear, anxiety, melancholy and other types of depression. The military, economic, sociologic, etiologic, and public health features of narcotic addiction have been recently considered at length by me and may be found in the literature, so that further discussion along these lines would seem superfluous at this time.

It is impossible to acquire immunity against opium and its narcotic derivatives. Wells (1918) definitely states that we cannot acquire immunity against alkaloids and other bodies of known chemical composition. Tolerance is characteristic of addiction, however; it is the biochemical defense against narcotics of the opium class. While we cannot definitely state at this time what tolerance really is, we do know that it is associated with chronic inhibition of metabolic processes, as a central action, so that only a relatively small portion of the narcotic given is active as such. The balance is probably split up into inert bodies by an enzyme-like process (Prof. C. M. Child: correspondence), for if we search for opium and its narcotic derivatives in the tissues and avenues of elimination none will be found unless the dose of addiction has been materially exceeded.

If morphine is given hypodermically to a normal animal it can be detected in the stomach within a minute and a half. It has been found that 40 per cent is eliminated by the stomach and a large part of the remainder by the intestine in non-addicted animals. In addicted animals, as noted, no morphine can be found in the intestinal tract, or in any of the tissues of the body unless the dose of addiction is materially exceeded. Tolerance disappears shortly after the withdrawal of narcotics. I have knowledge of cases in which a resumption of narcotics in the dosage of addiction has been followed by death. The importance of keeping this matter before us is obvious. If this were not true, if tolerance were not transitory, reduction methods would not be possible. I have seen patients who were sensitive to 1/16 of a grain of morphine 24 hours after narcotics had been withheld.

While it is desirable to empty the intestine and to keep the bowels active during treatment, drastic and exhausting eliminative measures are unnecessary. Intestinal intoxication plays a minor part in the pathology of the abstinence manifestations. We have inhibition of function in the periphery in narcotism and the digestive organs are involved with the others. A child born of an addicted mother will develop typical abstinence symptoms twelve hours after birth and will almost invariably die by the third day, unless it receives suitable treatment.

If intestinal intoxication played a major part with the tieing of the cord in the case of the addicted child, the maternal source, the only one, would cease at once and the child should recover unless overwhelmed by toxic bodies from the intestine, which is not the case. Shaeffer has called attention to the relatively large size of the adrenals in the newborn child. If the symptomatology were basically psychic, it would be difficult to adjust this contention to the case of the addicted child; psychic functions are undeveloped.

Crile has shown that deeply narcotized animals are not sensitive to toxines.

Medicinal Treatment.—Morphine sulphate gr. ¼ is given to block the sympathetic and hold back the output of adrenin. A half hour later pilocarpine hydrochloride is administered hypodermically in amount sufficient to slow the pulse from six to eight beats per minute. 1/15 gr. usually suffices. This dose should be repeated at intervals of from 2½ to 3 hours. If this interval is lengthened beyond 3 hours, abstinence symptoms will follow. Eserine salicylate should be given in full medicinal doses along with the pilocarpine. When the bowels move freely the eserine is discontinued. The saliva should be expectorated to avoid nausea; food should be withheld for some hours with the same object in view. This stage of the treatment should be continued for about three days. The third night luminol, elixir of veronal or some other hypnotic will be indicated in full doses for wakefulness. If from any cause the patient is restless, or nervous, with a wide pupil and pallor, morphine sulphate gr. 1/16 will give relief.

For a few days our skill will be taxed to bring about a subsidence of irritability at all levels. The employment of physical agents, such as the sinusoidal current, high frequency, tepid baths, with rest and quiet, give the most satisfactory results. Now and then a case does well, at this time, under full doses of atropine and strychnine. The patients should be spared emotional contacts, and physical discomforts, as far as possible.

It is important that re-educational measures be instituted at this time. I have devised a personality chart which has been of great benefit in the analysis of these cases and in accomplishing the re-establishment of mental stability which is of vital importance in the after care.

On the physical side simple hygienic and dietetic measures are adequate unless a condition is found to exist which requires special attention, and this should not be neglected. A follow-up is of the greatest importance. It is necessary for patients to avoid mental and physical fatigue; they are inclined to overestimate their resources. While undergoing treatment patients should be under control for at least a fortnight. This can best be accomplished in an institution especially adapted to the care of these cases.

Discussion.

Dr. Christian F. J. Laase, New York City: The theory that Dr. Stokes has advanced is really a very novel and interesting one, but after all, the validity of a theory is shown by the results of the logical carrying out, and I must say that all the evidence we have had—that of the Whitney Committee, and the evidence furnished by patients who have undergone the treatment advocated by Dr. Stokes—would seem to show that there is something wrong either in the theory or in the logical carrying out of the theory. We have the reports of too many individuals who have gone through the treatment and who give very discouraging reports of the results, discouraging not only as to the freedom of pain, as Dr. Stokes claims, or as to the ultimate result in permanently staying off the drug, but also from the call or need for the drug, and we have too many statements from patients that have gone through the treatment, as far as the physical condition is concerned, after the conclusion of the treatment. We have the reports of too many who have suffered at the end of the treatment or shortly after, from bloody vomit, bloody urine, and bloody stool.

Before we can really accept as valid the theories advanced by Dr. Stokes and accept as proven or demonstrated the validity of the treatment that he has had as a result of his theories, we must take into consideration these experiences of the patients.

Dr. James F. Rooney, Albany: I have been particularly concerned with the problem of narcotic drug addiction, owing to my work as chairman of the Committee on Legislation of the State Society, and it was at my suggestion that Senator Whitney requested the appointment of the Whitney Committee for the investigation of the matter. This was the first attempt to really investigate the question of narcotic drug addiction in New York State and without any question will lead to a very much more humane solution of this problem. Treatment of narcotic drug addiction by pilocarpin and eserin is based upon a false theory as to the pathogenesis of the withdrawal symptoms on morphine addiction, and in fifteen cases treated in my wards in hospital it has not worked well, there having been four cases of collapse, all serious and one fatal. In recent years since the repressive measures against drug addiction have been taken, I have not seen an addict who was not in a continuous state of fear and that fear very greatly increased this need for the drug.

The medical profession has been derelict in not having given this subject the consideration it deserves; they have followed all sorts of so-called "cures," some of which owed their vogue to the names attached to them and others of which were merely in the nostrum class. I have yet to see an addict who has been cured through these various advertised treatments and by the word advertised I include those which have been given wide dissemination in reputable medical journals.

There are many theories, and there are many cures, but extremely few of them are based upon the complete and thorough-going investigation of the whole subject; likewise we forget one thing, that is, that the craving for certain substances to relieve one from the odium and cares of life has existed practically as long as the human race has existed. Alcohol has until within recent times, been the drug that was used by every people of which we have historical or anthropological knowledge. The strong carry their load and burden without breaking down; the weak break down. and rather than confess their break, seek forgetfulness. I am sure that much more investigation must be done, scientific investigation, investigation that is carried out with all the technique of the laboratory, with all of the incisiveness of a clear mind, and many clear minds together, before we can have begun to break the crust of this question, within which is hidden the salvation of many people.

This problem, which is one of the most important ones confronting the medical profession, is due to the negligence which allows the problem to be attacked by laymen, lawyers, jurists and welfare people who consider the matter from the standpoint of crime and not that of a disease either physical or mental. The most necessary thing today is a careful co-ordinated scientific investigation of the medical and psychological side of the problem.

Dr. Ernest S. Bishop, New York City: I have followed Dr. Stokes' papers and statements with much interest, and am glad that he adds another student to the neglected field of narcotic drug addiction.

I cannot, however, subscribe to his theory of narcotic addiction as being based on a disturbance of glandular secretions, especially adrenal, and on sympathicotonic nervous unbalance. Every clinical student of addiction will agree that the phenomena of glandular and nervous disturbance are present in very many narcotic addicts, but I am sure that many, if not most, experienced clinical observers regard these manifestations as incidental rather than fundamental. I find it difficult to explain many of the physical symptoms and constant physical phenomena, found in laboratory research upon addicted animals, and seen in human addicts by this theory. Many of the physical phenomena, indeed, seem to argue against this theory.

That these phenomena, observed by Dr. Stokes in the addicts under his care, closely resemble the phenomena of fear, seems to me to point to the true and obvious explanation of their origin. They very probably did not only resemble the phenomena of fear, but were the phenomena of fear, and of shock and of exhaustion experienced by the patients who manifested them. I believe that Dr. Stokes has, perhaps, like others of us in our experience, misinterpreted incidental manifestations shown by frightened and suffering individuals as intrinsic phenomena of their physical disease. Certainly my own observation is that the manifestations he notes appear in ratio to the amount of fear and suffering experienced by the individual rather than as constantly and evenly present manifestations of physical addiction. The glands of internal secretion and the sympathicotonic nervous system are, of course, somewhat disturbed by the reactions of addiction, just as they are by the reactions of many other diseases, but I do not think their disturbance satisfactorily explains the mechanism of production of addiction.

The observation of several clinical workers, and the excellent laboratory experiments of some of the European research workers, point to other explanations as being far more reasonable and probable.

Any theory of addiction formation that is to survive must explain clinical symptoms and phenomena in newly-born infants, addicted from birth, and must explain the material observations made by instruments of precision and otherwise upon addicted laboratory animals. There is a great amount of actual demonstrated authoritative fact to be considered before we can accept any theory of addiction. Very many of these facts, to my mind, and as I know to the minds of other workers, argue against the theory advanced by Dr. Stokes.

As to pilocarpine and eserine, they have been used and studied in addiction work for many years. The usefulness and status of pilocarpine in addiction is discussed by writers many years back, and the consensus of opinion of experienced workers seems to me to remain as expressed by Oscar Jennings twenty some years ago, as one of the drugs having a more or less limited usefulness to meet some of the indications in some cases. That pilocarpine and eserine have any specific action curative of narcotic addiction, will, I believe, be contested by nearly all men of experience and clinical study. They are useful along with other remedial therapeutic measures and drugs, are nothing more and are nothing less, and have their distinct disadvantages. There is no specific panacea for the cure of addiction and probably never will be. The man who clinically understands the reactions of addiction and can intelligently interpret the clinical symptomatology into rational therapeutics, finds narcotic addiction disease one of the most definite conditions of clinical medicine, and one of the most controllable, and in very many, if not a majority of cases, clinically curable. His ability to handle the disease, however, depends upon his knowledge of it, and his personal therapeutic and clinical ability, and does not depend upon any one drug or group of drugs. The real solution of control of narcotic addiction lies in its study and clinical teaching on the same basis as other diseases of clinical medicine. Until this is arranged for nothing of any widespread value will have been accomplished.

We all welcome Dr. Stokes as a new worker in the study of addiction, knowing that time and practical experience is the only test for his as well as for other theories.

Dr. Charles F. Stokes, New York City: Dr. Bishop has failed to grasp my conception of the pathology of abstinence. It is difficult to reply to his remarks, for at one point he says that addicts know no fear, and later he says that morphinists fear physicians. How can such statements be reconciled and where do they lead?

In reply to another statement that bloody diarrhœa and hemoptysis followed this method of treatment, I might tell you that one of my convalescents sustained a fracture of the base of the skull, a compound fracture of the tibia, and a fracture of the scapula and survived. These injuries were quite as closely related to this method of treatment as was the hemoptysis and bloody diarrhœa alluded to.

In the case of the child born of an addicted mother we have a satisfactory demonstration of the pathology outlined.

The gastro-intestinal tract of the newborn child is sterile and intestinal contamination must come through the placental circulation. When the cord is tied this source of poisoning, if any there be, is abruptly cut off and conditions should improve.

The cortical centers are undeveloped in the newborn child, hence phychic factors play no material part in the symptomatology of abstinence.

Those who have given the matter careful thought pretty generally believe that the autonomous nervous system with its centers and expansions first came into existence. It is the zone of our emotions and desires. The cerebrospinal system functions largely in attuning us to our environment. With the sharp withdrawal of narcotics the most pronounced effects are seen in the autonomous nervous system and the closely allied ductless glands. They are the regulators of metabolism. The autonomous nervous system and the ductless glands are the basic agents of the physiologic expression of the emotions. Abstinence symptoms are symptomatically and physiologically much like fear and the confirmation of the seat of these manifestations is that there is no psychic stimulus sufficiently potent to excite such profound disturbances. Adrenin is the activator of the sympathetic and the vagus is its antagonistic. Pilocarpine is the best vagus stimulant we have, hence, its use in the preliminary treatment. After the third or fourth day there is hyperirritability of both vagus and sympathetic as well as the cerebro-spinal system. At this time small doses of hyoscine with omnopon and cactin work splendidly, especially if followed up by a second moderate dosage of pilocarpine with calcium and aspetic ergot.

The diet is important. It should be easy of digestion, largely free of animal proteins. Lecithin and potassium permanganate are helpful.

It must be admitted that we are dealing with a condition of tolerance accomplished in all probability through enzyme-like action and not a condition of immunity.

The re-educational measures tend to avert relapses, and mental analysis often gets at the root of the beginning of addiction.

It is to be regretted that many of those most active in this field of medicine are inadequately trained, not overburdened with an ethical conscience and have taken advantage of the chaotic condition of the problem to gain a measure of notoriety which would otherwise be quite beyond their reach.

The broad scope of the problem demands painstaking clinical and laboratory studies by the best minds in medicine.

Legal Opinion

Office of the Attorney-General,
Albany, March 21, 1919.

Hon. Matthias Nicoll, Jr., Acting Commissioner of Health, State Department of Health, Albany, N. Y.

Dear Sir:

You have called my attention to the opinion of Mr. James Taylor Lewis, counsel, Medical Society of the State of New York, printed on page 102, March number, New York State Journal of Medicine, holding that Chapter 177 of the Laws of 1918 and Chapter 639 of the Laws of 1918 are unconstitutional. In his review of the situation Mr. Lewis attacks the statutes under nine heads, which I interpret to go only to the policy and wisdom of the legislation. With these, of course, I have nothing to do, since such suggestions should be addressed to the Legislature itself. He then states:

"Finally, I am convinced, though the decisions are at variance, that the statutory provisions beginning with the laws of 1828 have surrounded the public with certain rights of secrecy in reference to their physical condition, which rights are violated by both our State laws above referred to.

"I am, therefore, forced to the conclusion that rights of citizens, established by years of statutory enactment, referring to the privilege of secrecy of facts, connected with the relationship of doctor and patient, are by these two laws violated so far as they refer to this privilege, and should be completely eliminated as a part of the law, because they contravene acquired statutory rights of citizens which our State Constitution safeguards."

The learned counsel fails to point out specifically just what provision of our State Constitution is violated by the enactments. Since he has failed to designate it, and I have been unable to find any such provision, I presume he bases his argument upon the nature of constitutions generally. Such a contention is, in my opinion, absolutely invalid, and in answering Mr. Lewis I will simply call attention to certain general principles, which I believe are controlling, until such time as the learned counsel may see fit to point out particularly just what decisions of the court, and just what provisions of our written fundamental law fortify his position, or under which the Legislature transcends its powers.

In the first place, the Court of Appeals of this State has declared that there has never existed in New York a common law right of privacy or "secrecy." Such a right or privilege is of statutory creation in this State. If the privilege has been guaranteed at common law, Mr. Lewis's argument might have some validity, upon the ground that the privilege was inherent in the Constitution like some of the rights and privileges conferred under Magna Charta. See decisions of our courts relative to the inviolability of contracts, the imposition of liability without fault under the Workmen's Compensation Law, *etc.*

Yet Mr. Lewis concedes that the privilege of a patient to *prevent* the disclosure of confidences by his physician arose through the pioneer enactment of the New York State Legislature in the year 1828. I take it to be no more than a rule of evidence, founded upon considerations of convenience and public policy. Nevertheless, such rules of evidence may be amended without violating any right of liberty or contract. Witness the statutes affecting time of limitations in actions, the addition of Section 841-B to the Code of Civil Procedure in 1913, transferring the burden of proof as to contributory negligence from the plaintiff to the defendant in death cases, the provisions making certain facts *prima facie* proof of criminality. All these have been held to be constitutional.

It is, therefore, my opinion the statutes referred to are constitutional and that any physician violating the same should be prosecuted, as in the law provided.

(Signed) Charles D. Newton,
Attorney-General.
Edward G. Griffin,
Deputy Attorney-General.

Syracuse*

Yesterday and Today

The City's Ancestry

SYRACUSE, which now holds out a cordial greeting to the Medical Society of the State of New York, welcomes its guests not merely to the city of the present. The city of the present, indeed, is but the child of the city of the past. Syracuse inherits not alone the natural advantages which guided its first settlers in making this their home; not alone the arrangement of the streets and their names; not alone the gifts which the men and women of past generations made to the public welfare and the memory of the devoted, generous and courageous forerunners of the present generation; but in addition to all these the spirit of these forerunners abides in the Syracuse of today. There is an heredity in cities as in men. Where one finds a place endowed with democratic spirit, progressiveness, generosity, enterprise, hospitality, love of the best things in community life, it is safe to say that such a community is likely to succeed, and it is safe to look to the lives of the pioneers for the traits that show themselves today. The spirit of the fathers unconsciously manifests itself in the spirit of the children.

Therefore it may be interesting, as the members of the Medical Society cross the threshold of this city, to look at the ancestry of the community and see what the present Syracuse must be if it is to come up to the standard set by the past. It will be found that this is not an easy test. The sacrifices of the pioneers in the building up of the young country, their devotion to free education, their important contributions to building the transportation systems of the State, their ingenious industry, their services in the cause of human liberty constitute a record not easy to imitate and a standard not easy to maintain.

The Onondaga Indians

As to natural advantages, these were understood before the white men came. The Onondagas had lived in this section for at least two centuries. They were that part of the Iroquois federation known in the picturesque imagery of the Red Man as the Keepers of the Council Fire; their place was in the center of the "Long House" which extended from the Hudson to Lake Erie and included all six Indian nations. Onondaga Valley, to the Southward of the City of Syracuse, was their home at the time of the Revolution and here they were visited by missionaries and explorers at various periods before that fateful hour. The tide of Western civilization crept nearer and nearer to them. In Revolutionary days the New York frontier was at Fort Stanwix, now Rome, and followed the Susquehanna River to Tioga Point, now Athens, Pa. The civilization of the Iroquois did not survive the War of Independence. Revenge for the massacres brought about by the unholy alliance of the British and the Indians resulted in Sullivan's expedition from Tioga Point north and west, which swept the Iroquois nations away, though the descendants of the Onondagas of that era still remain on the reservation a short distance south of the city limits.

What Nature Did for Us

The Iroquois had little enough to do with the building up of the settlement which later became Syracuse; not as much, in fact, as the inanimate forces which laid the foundations underneath the soil, piled up the hills and chiselled out the channels for the streams. It was not by chance that the ancient explorers, passing from tidewater to the plains, ascended the Hudson and then the Mohawk and crossed the height of land near what is now Rome to Wood Creek which runs into Oneida Lake with its convenient outlet to Lake Ontario; the Pathfinder's Trail Cooper called it. That gate to the West is in fact the easiest along the whole North Atlantic coast and it put Syracuse with the other cities between Albany and Buffalo on the high road from East to West. The face of the country throughout Central New York is what a great glacier left it. The ice sheet advanced from Labrador, geologists tell us, and reached a line which follows roughly the northern boundary of Pennsylvania. During its slow retreat it paused for a long time on a line running through Onondaga County. The ice was a mile deep over what is now Syracuse. The escaping waters carved the channel through which the Lackawanna Railroad runs to the south of the city, and it created a waterfall at West Green Lake near Jamesville which equalled Niagara. The land on which this remarkable natural phenomenon took place is the property of the State, having been bought in 1915 by Mrs. Mary Clark Thompson, of Canandaigua, and presented by her to the Regents of the University of the State of New York.

The most important legacy which Nature has presented to Onondaga County is in the deposit of limestone which underlies the soil in a large part of the county, and of salt, which occurs at a great depth in the southern part of the county and seeps to the surface in briny springs at the south end of Onondaga Lake. The salt springs, well known to the Indians, became the basis of the first great industry of this city. For a time Syracuse was the salt supply of the nation. Later, through the enterprise and faith of William B. Cogswell and his associates the brine from Tully and the limestone from Split Rock and Jamesville made this the location for the works of the Solvay Process Company, whose manufactures of soda ash and allied products have meant much to this locality and to the world. As for the limestone itself, it is enough to say that without it F. E. Dawley's Onondaga alfalfa could not have captured the gold medal at the Panama Pacific Exhibition.

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* Prepared by Paul M. Paine, Litt.D., Librarian, Syracuse Public Library.

The First Pioneer

Ephraim Webster, having served as a soldier under Washington, and being impelled by the roving spirit which possessed so many Americans as long as there was an American frontier, moved west in 1786 and built him a cabin on the west side of Onondaga Creek near the lake. It must have been a marshy, salty and rather disagreeable place of residence, but Webster was a trader, and his business was with the Indians. Scenery did not especially attract him. He passed through many hair-raising experiences, but survived to serve the country again in the war of 1812. He was our first white settler, so far as the records show. Other pioneers came two years later. They were Asa Danforth and Comfort Tyler and they settled in Onondaga Valley in 1788. Tablets have been erected in their memory, one on the west and the other on the east side of the valley. They were the beginners of the salt industry. Twelve years later, in 1800, came Joshua Forman, a man of energy and eminence, whose memory well deserves the honor which is paid to it by the Redfield and Forman statue in Forman Park a few blocks east of the center of the city. For some time the present site of Syracuse was not much thought of as a place for residence or business. There is a white spire on Onondaga Hill, visible from many places in Syracuse, that marks the place where civilization took root in preference to the lowlands by the lake, and a still more beautiful church building at Onondaga Valley, which celebrated its centennial in 1910.

In Abolition Days

So much for beginnings. The romantic period in this city's history began three-quarters of a century ago, when Daniel Webster, the statesman who came so near to winning the great prize in American statesmanship, and fell so tragically, through his anxiety to win, made an historic visit to Syracuse. From the porch of the hotel which stood at the meeting place of our two great highways, Salina and Genesee, Webster, in 1851, stood up to defy and denounce those who had defied and denounced the Fugitive Slave Act with its terrible corollary that the black has no rights that the white man is bound to respect.

Webster regarded the Fugitive Slave Act as a sacred thing.

To that speech from the porch of the Syracuse House there came in the same year a stirring answer. There was in this city a black man who had earned the good-will of his neighbors and was thought to deserve their protection, and a white man who was ready to offer what protection courage and enterprise could give. The Negro Jerry was arrested under the Fugitive Slave Act at the request of a man who claimed to be his owner. He tried to escape, but was captured and brought back with two or three men sitting on his body. When the case came before a magistrate, the friends of freedom gathered at an appointed signal, and illegally took Jerry away from the officers of the law. He was concealed in a house on East Genesee Street. A few days later he was illegally placed in a buggy drawn by two fast horses, and, pursued vigilantly by officers, he was carried to the village of Mexico and thence to Oswego, where a little sailboat was waiting. The boat sailed away. It illegally took Jerry from the shores of a land where slavery was legal to a shore where men were free.

That was the end of the story so far as Jerry was concerned, but for the Reverend Samuel J. May, pastor of the Unitarian Church in Syracuse, who was the leader of the Jerry Rescue, it was not the end of the story. He was prosecuted in a perfectly legal way for a good while, but since no jury could be found in this part of the world composed of sane men who had not made up their minds about the Fugitive Slave Act, he was never convicted. Mr. May and the other friends of freedom left their mark on this community. Syracusans of the present day feel that this is a better town than it could possibly be, had it not been for the illegal behavior of the men who risked their reputations, their freedom and their lives that the Negro Jerry might illegally escape to a place where he could be legally his own man.

If the city of Syracuse in 1919 stands high among American communities on account of the regard which it shows for the less favored, if it is aggressive and forward looking in matters of social reform, if it supports the United States with exceptional ardor in campaigns undertaken for the cause of freedom and democracy, it is, so some enthusiastic Syracuse folks are prone to believe, partly because of the foundation which was so illegally laid by

Samuel J. May and other trouble makers sixty-eight years ago come next summer.

There is a marble bust of Mr. May in the Public Library. It represents him as a placid and good-natured man, with deepset eyes, but with few or none of the marks of the fanatic.

Places of Interest

A Jerry Rescue tablet in bronze is attached to the building where the incident transpired. The Philip Eckel monument, at North Salina and State Streets, is in memory of a fire chief who lost his life in the line of duty. The White Memorial in Fayette Park is another tribute of the same sort. Hamilton S. White was a fire commissioner, and one of the most eminent and best loved citizens of this city.

The chief memorial of the valor of Onondaga men is the Soldiers' and Sailors' Monument in Clinton Square, unveiled in 1910, the gift of Civil War veterans, aided by the city and the county.

The Soldiers' Monument

Syracuse has no civic center. Its public buildings, as is commonly the case in the somewhat haphazard development of American cities, are scattered, the City Hall fronting the New York Central Railroad tracks at Montgomery Street, the Post-office on Warren Street a block north of the Onondaga Hotel, the Court House and the Carnegie Building on two sides of St. Mary's Circle, where Onondaga and Jefferson streets meet, one block east of the Onondaga Hotel, the Education Building facing the Soldiers' Monument, the New York Central Railroad station four blocks west of the City Hall.

It is in the dignified and beautiful court rooms of the Onondaga County Court House that the section meetings of the Medical Society are to take place. The commercial exhibits and the bureaus of registration and information will be located under the same roof.

Onondaga County Court House

Progress has been made in the physical equipment of the school system, as the new Vocational High School, and the Delaware School, with provisions for "fresh-air" children and many other specialties, will prove.

Important to the city's welfare are the Y. M. C. A. building, across Montgomery Street from the Library, the new and beautiful Y. W. C. A. building, just east of St. Mary's Circle, the Masonic Temple, and the Historical Association building in Montgomery Street, the Museum of Fine Arts with a good collection of paintings by American artists sharing the Carnegie building with the Public Library, the Chamber of Commerce, in Warren Street south of Jefferson Street, the Armory in Jefferson Street one block west of Salina near the Lackawanna station on the site of what was once a mill pond.

Some of the Hospitals

Among the numerous hospitals which will attract the attention of the members of the Medical Society of the State of New York may be specially noted the City Hospital for contagious diseases situated in Teall Avenue, the Psychopathic Hospital in Belden Avenue, and the County Tuberculosis Hospital on Onondaga Hill south of the city, remarkable for its superb location and its excellent and well-managed plant, erected and paid for by the county, not without some political and financial dust and heat.

These institutions have their special duties. The Syracuse Free Dispensary meanwhile carries on its important work which was begun thirty years ago. Dr. H. D. Didama, Dr. John Van Duyn, and a number of philanthropic business men of the city, met on July 5, 1888, and organized this agency on behalf of the less-favored. After occupying three other places in the down-town section of Syracuse, the Dispensary removed, in 1914, into the building it now occupies at 610 East Fayette Street. Syracuse University provided the building, and makes physicians' appointments, but furnishes no financial aid. On a budget of $6,000, free treatments were provided for 3,828 persons last year. The total number of treatments was 20,373.

Syracuse Free Dispensary
An Institution of Great Value in Social Welfare

The important general hospitals of the city are the University Hospital of the Good Shepherd, the Syracuse Memorial Hospital (formerly the Women's and Children's Hospital), St. Joseph's Hospital, and the Homeopathic Hospital.

University Hospital of the Good Shepherd

The House of the Good Shepherd, as it was then called, was established in 1875 through the efforts of the late Frederick Dan Huntington, the beloved bishop of Central New York. It became the property of the University in May, 1915. A new wing, running out to University Avenue, has just been completed. In addition to the main building, a children's pavilion occupies quarters of its own, and two other pavilions, connected by a bridge, are devoted to obstetrical cases.

Syracuse Memorial Hospital

In 1887 the opening of a small house in the West End of the city to admit three babies was the beginning of the Women's and Children's Hospital which moved into its present home on December 1st, 1896, most of the funds for the present plant having been raised by the efforts of public minded women.

St. Joseph's Hospital was founded in 1869 by the Sisters of the Third Order of St. Francis. It has from the beginning enjoyed the advantages of co-operation with many of the most brilliant men of the medical profession of this city.

As for the Syracuse City Hospital for Contagious Diseases, it has always held high rank among institutions of its class, both as to administration and equipment. It has a capacity of about 300, and holds itself ready for any emergency. More than 100 infantile paralysis cases were cared for at the City Hospital during the epidemic of two years ago, and sixty pneumonia cases were taken during the influenza epidemic of last winter. The feature of the work of such an institution, if it is successful, must be that it is convertible so that it will not be found wanting in any crisis. Of late years 50 per cent of the contagious cases in the city have been cared for in this hospital.

The Homeopathic Hospital, incorporated in 1895, has been located on its present site at the corner of Castle and South State streets since 1904.

The latest of the public hospitals of the city is the Crouse Irving Hospital which occupies a new and commodious building on University Hill, and is already playing an important part in the health interests of the community.

The University

To a greater and greater degree Syracuse University is becoming a factor of pervading importance in the life of the city. It dates from 1870, but during the last quarter century, and more especially under the robust and tireless leadership of Chancellor James R. Day, it has taken on a remarkable growth. The addition of the Hospital of the Good Shepherd to the activities of University management is one of the more recent incidents of this growth. The College of Medicine, in Orange Street, associated with the names of Didama, Gaylord Clark, Elsner, and Jacobson; the College of Law facing Fayette Park, and the University Block still nearer the business center of the city, are the outposts. The College of Medicine has the distinction of being put in the first division of Class A by the Council on Education of the American Medical Association, and also in the list of first-class schools by the National Education Department at Washington. Syracuse University added the Geneva Medical College to her family of colleges in 1872 when the school was removed to Syracuse and became the College of Medicine of Syracuse University. The Geneva Medical College in turn was descended from the Fairfield Medical School, chartered in 1812, the second medical school to be chartered in the State of New York and the fifth in the United States. During its thirty-seven years, the Geneva Medical College conferred the degree of M.D. upon 701 students. The number of students now enrolled in the College of Medicine is 130.

The College of Medicine, Syracuse University

John Crouse College of Fine Arts, Syracuse University

The University proper is seated on a commanding height to the southeast. Colleges of Liberal Arts and Fine Arts, the Smith School of Applied Science, the Teachers' College in the picturesque old residence once known as Yates Castle, are among the more important features of the work of an educational institution which requires the services of faculties numbering more than 300 and which ministers to the needs of a student body of about 4,000. The State College of Forestry and the Joseph Slocum College of Agriculture are the newest members of this growing family. The atmosphere of the university influences the city through countless channels, not the least important of which is that of athletics, finding vociferous expression in spring and fall in the great Archbold Stadium, where town and gown join in cheering the university teams in their contests with visiting organizations on the gridiron, the diamond, the field and the track. The Men's Gymnasium, connected with the Stadium, is remarkable for capacity and equipment. The College of Medicine has its own history, some of it eventful enough in the period when subjects for dissection were difficult to obtain.

SKANEATELES WATER

One of the great assets of the City of Syracuse in the balance sheet of public health is its water supply. Within the memory of men not past middle age, the only public water supply was from the stream which runs from the southern hills to the lake, and for potable water the people of the city depended in large measure upon tanks filled from the Dorwin Springs and driven through the streets. A quarter of a century ago, however, there was a great celebration in Syracuse. Wagons decorated with tin drinking cups paraded the streets. The water from Skaneateles Lake was for the first time at the service of the people of Syracuse. The lake, 500 feet above the downtown level of the city, sixteen miles distant as the crow flies, and with an area of about fifteen square miles, was the obvious source from which to get a supply of excellent water, so situated that a gravity system could be constructed.

The manufacturing interests along the outlet of the lake, the interests of Skaneateles village, and the interests of the State in the Erie Canal, of which the outlet was a feeder, were in real or apparent conflict with the needs of the city. It was not until a long and difficult period of litigation had been conducted that the right to bring Skaneateles water to Syracuse was finally established. The result upon the death rate became at once apparent.

Following a comprehensive plan for clearing up the great water shed which includes all the lakes and streams that drain into the Oswego River, Syracuse began some years ago the construction of an intercepting sewer, to be followed by the building of a disposal plant which will restore Onondaga Lake to its original innocence.

Projects for the Future

This is but one of the projects for preparing Syracuse for its next epoch of growth and improvement. We have waited for some years for the new Post-office to be built on the large space of land bought for the purpose west of the Soldiers' Monument, and for the working out of a great plan for converting a part of the present Erie Canal bed into a right of way for the passenger tracks of the New York Central. This far-reaching improvement, which depends upon the joint action of the city, the State and the Railroad Company, will remove hundreds of grade crossings from our streets. It had to wait for the completion of the State barge canal. For the barge canal follows the ancient route through Oneida Lake and reaches Syracuse by way of Onondaga Lake and an artificial harbor in the northern part of the city. It will take over the functions of the old water way made familiar to fiction readers by the "Low Bridge" chapter of our own Syracuse classic David Harum.

Syracuse looks forward with impatience to these innovations. It is not a patient city. The late Bishop Huntington was right when he said that the line between the East and the West was indefinite, but that it was somewhere between Utica and Syracuse. We have, as Mr. Ade says of a town nearer the Rockies, an eastern exposure, but for family resemblances to Syracuse, visitors here must look rather to the Mississippi Valley settlements than to Boston or Manhattan.

To this city, then, with its beginnings in the Indian frontier, its eventful history, its varied life, its great problems, its great advantages, its centers of education, inspiration and religion, its growing appreciation of practical duties to the young folks, the foreign born and the less fortunate, its thriving and varied manufactures, its confidence, its faith, its ambitions, its goodfellowship, the Medical Society of the State of New York is gladly and proudly welcomed.

Medical Society of the State of New York

FRANK VAN FLEET

Dr. Frank Van Fleet, Treasurer of the Medical Society of the State of New York, died suddenly in his office on the afternoon of April 5th.

Dr. Van Fleet had been for some time in ill health, and accepted the treasurership reluctantly and only at the solicitation of friends to whose judgment he deferred. It was their wish not only that that important office should be administered by him, but also that his great experience and calm judgment should be availed of in the House of Delegates and in the Council.

During his whole life Dr. Van Fleet was devoted to the interests of the County and State societies, often at the expense of time, strength, and income. As a member of the Joint Committee of Conference before the amalgamation he was one of the few now left who fully understood that era, so important to the profession of this State. As the men of those years have passed away one by one, a great gap has been left, very difficult at this day to adequately fill. Dr. Van Fleet's death inflicts a grave loss upon the medical organization, both County and State.

AMENDMENTS TO THE CONSTITUTION AND BY-LAWS WHICH WILL BE PRESENTED FOR ACTION AT THE NEXT ANNUAL MEETING.

Amend the Constitution, Article IV, by striking out the words "each county society shall be entitled to elect to the House of Delegates as many delegates as there shall be state assembly districts in that county at the time of the election except that each county society shall be entitled to elect at least one delegate and except that whenever at the time of election the membership of a county society shall include members from an adjoining county or counties in which there shall be no county society in affiliation with this society such county society shall be entitled to elect, from among such members, as many additional delegates as there are assembly districts in the county or counties so represented in its membership."

And inserting the words: "The delegates shall be apportioned among the constituent societies in proportion to their actual active membership, except that each constituent society shall be entitled to elect at least one delegate. The House of Delegates may from time to time fix the ratio of apportionment."

Amend the Constitution, Article VI, Section 1, by adding the following: "The annual meeting shall take place the first week in May."

Amend the By-Laws, Chapter VII, Section 4, by striking out the words: "The Committee on Legislation shall consist of a Chairman to be elected by the House of Delegates and of the Chairmen of the Legislative Committees of the constituent county societies."

And substituting the following: "The Committee on Legislation shall consist of three members including the Chairman."

Amend the By-Laws, Chapter VIII, Section 4, by adding after the words "council of the society," "except that it shall have a free hand in dealing with members addicted to practices considered not strictly professional in their methods of practice."

The By-Law will then read:

"Each district branch may adopt a constitution and by-laws for its government, provided that the same shall first be approved by the council of the society, except that it shall have a free hand in dealing with members addicted to practices considered not strictly professional in their methods of practice."

County Societies

ONTARIO COUNTY MEDICAL SOCIETY.

Regular Meeting, Canandaigua, N. Y.

Tuesday, February 11, 1919.

After a dinner at Hotel Webster Grill, the meeting was called to order and the following scientific program presented:

"X-Ray Findings and the Surgical Treatment of Abdominal Conditions," Charles Harvey Jewett, M.D., and Charles W. Webb, M.D., Clifton Springs.

"The Venereal Disease Problem in the Army and Civil Life," Isaac W. Brewer, M.D., Geneva, recently in charge of Camp Humphrey, Va.

"The Diagnosis and Treatment of Early Tuberculosis," by Dr. Rose, of the New York State Department of Health.

MEDICAL SOCIETY OF THE COUNTY OF RENSSELAER.

Special Meeting, Troy, N. Y.

Tuesday, March 27, 1919.

At a special meeting of the Society the following resolution was passed:

"That the Society is opposed to the Health Insurance Bill on account of its compulsory features and its relations to the medical profession."

The Society also placed itself on record as being opposed to the Chiropractic Bill.

SCHUYLER COUNTY MEDICAL SOCIETY.

Annual Meeting, Watkins, N. Y.

Saturday, January 18, 1919.

The following officers were elected for the ensuing year: President, John M. Quirk, M.D., Watkins; Vice-President, Arthur H. Jackson, M.D., Odessa; Secretary, N. Philip Norman, M.D., Watkins; Treasurer, Delivan W. Scutt, M.D., Watkins; Delegate to the State Society, Albert W. Ferris, M.D., Watkins; Alternate, John M. Quirk, M.D., Watkins.

The Secretary reported the transfer of Dr. Albert W. Ferris, of Watkins, from the Saratoga County Society to the Schuyler County Society.

The application of Allen W. Holmes, M.D., for transfer from the Erie County Society to the Schuyler County Society was received, to be acted upon as soon as Dr. Holmes presents the proper credentials from the Erie County Society.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

Surgical Treatment. A Practical Treatise on the Therapy of Surgical Diseases for the Use of Practitioners and Students. By James Peter Warbasse, M.D. Formerly Attending Surgeon Methodist Episcopal Hospital, Brooklyn. Three large octavo volumes; separate Index Volume. Volume III, 861 pages, 864 illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Per set (Three Volumes and Index Volume). Cloth, $30.

Ultra Violet Rays in Modern Dermatology. Including the Evolution of Artificial Light Rays and Therapeutic Technique. By Ralph Bernstein, M.D., Prof. Dermatology, Hahnemann College, Philadelphia. Published by Achey and Gorrecht, Lancaster, Pa., 1918.

State of New York. State Hospital Commission. Twenty-ninth Annual Report, July 1, 1916, to June 30, 1917. Albany, 1918.

Clinical Microscopy and Chemistry. By F. A. McJunkin, M.D., Professor Pathology, Marquette University School of Medicine; formerly Assistant in the Pathological Laboratory of the Boston City Hospital. Octavo volume of 470 pages with 131 illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Cloth, $3.50.

The Medical Clinics of North America Volume II, Number III (The Philadelphia Number, November 1918). Octavo of 275 pages; 46 illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Published Bi-Monthly. Price per year: Paper, $10; Cloth, $14.

The Elementary Nervous System. By G. H. Parker, Sc.D., Professor of Zoology, Harvard University. 229 pages. 53 illustrations. Philadelphia and London: J. B. Lippincott Company, 1919. 12mo. Cloth, $2.50. (Monographs on Experimental Biology.)

Forty-sixth Annual Report of the Secretary of the State Board of Health of the State of Michigan for the year ending June 30, 1918. 1919.

The Operative Treatment of Chronic Intestinal Stasis. By Sir W. Arbuthnot Lane, Bart., C.B. Consulting Surgeon to Guy's Hospital, and to the Hospital for Sick Children, Great Ormond Street. Fourth Edition, revised and enlarged. Published by the Oxford University Press, N. Y. C., in 1918.

Lice and Their Menace to Men. By Lieut. L. L. Lloyd, R.A.M.C. (T). Chief Entomologist in Northern Rhodesia. With a Chapter on Trench Fever by Major W. Byam, R.A.M.C. Published in 1919 by the Oxford University Press, N. Y. C.

The Early Treatment of War Wounds. By Col. H. M. W. Gray, C.B., C.M.G., M.B. Aberdeen, F.R.C.S. Ed. Consultant in Special Military Surgery, late Consultant Surgeon, British Expeditionary Forces, France. Published in 1919 by the Oxford University Press, N. Y. C.

Lippincott's Nursing Manuals. Essentials of Surgery. By Archibald L. McDonald, M.D. A Textbook of Surgery for student and graduate nurses and for those interested in the care of the sick. 46 illustrations. Published by J. B. Lippincott Co., Philadelphia and London. $2.00 net.

United States Naval Medical Bulletin, Published for the Information of the Medical Department of the Service. Issued by the Bureau of Medicine and Surgery, Navy Department, Division of Publications. Report on Medical and Surgical Developments of the War. By William Seaman Bainbridge, Lieutenant Commander, Medical Corps United States Naval Reserve Force. Published by the Washington Government Printing Office, January, 1919.

Le Tube Coolidge. Ses Applications Scientifiques Medicales et Industrielles. Par H. Pilon. Masson et Cie, Editeurs. Libraires De L'Academie De Medicine 120, Boulevard Saint-Germain, 120, Paris. 1919.

The Adventure of Life. By Robert W. Mackenna, M.A., M.D. Author of "The Adventure of Death." Published by the MacMillan Co., N. Y. C., in 1919. Price $1.25.

The Surgical Clinics of Chicago, Volume III, Number 1 (February 1919). Octavo of 236 pages, 75 illustrations. Philadelphia and London: W. B. Saunders Company. 1919. Published bi-monthly. Price per year: paper, $10; cloth, $14.

Book Reviews

Equilibrium and Vertigo. By Isaac H. Jones, M.A., M.D. Laryngologist, Philadelphia General Hospital; Instructor Neuro-Otology, University Pennsylvania; Major M.R.C., U. S. A. With analysis of Pathologic Cases by Lewis Fisher, M.D. Laryngologist and Otologist, Mt. Sinai Hospital, Philadelphia. Adopted as standard for Medical Division, Signal Corps, Aviation Section, by Surgeon General and Chief Signal Officer, U. S. A. With 130 illustrations. J. B. Lippincott Co.: Philadelphia and London, 1918. Price, $5.

In comparing this book with those that have hitherto been written on this subject by various authors, one is impressed at once with the simplicity of style combined with a lucidity of expression rarely found in our medical text-books. The reviewer had the good fortune to spend some time studying this subject under the tutelage of the author at the University of Pennsylvania. "Equilibrium and Vertigo" was in the course of preparation at that time and the reviewer had the opportunity of reading much of the original text.

Neuro-otology has been little understood by the medical profession at large. To the Vienna School, notably Barany, Neumann, Rutten, Alexander Kreidl, is due the credit for giving an impetus to this study. The studies conducted by Barany and his school were founded on the investigations and deductions of a considerable number of original workers in this field. Barany co-ordinated the observations of his predecessors and engaged in some experiments which gave astonishing results.

During the past ten years Robert Barany's original contributions have been such as to give him the leading position in Neuro-otology. In 1913 the Society of German Neurologists accorded him a neurological prize. In 1915 he was awarded the Nobel prize for scientific medical work.

In this country valuable contributions have been made by Mills, Shambaugh, E. R. Lewis, George Makenzie, Friesner, Braun, J. G. Wilson and Pike. To Jones, however, should be given the greatest praise for his very notable and original investigation and deductions. Jones has given us the first real conception of vertigo and pastpointing. Barany believed that vertigo and pastpointing were essentially cerebellar in character. Jones has proven conclusively that vertigo and pastpointing are cerebral phenomena. The other epoch making contribution of Jones has taken the study of brain localization out of the realm of speculation and placed it in the field of accurate scientific study. Jones has shown that the nerve tracts from the horizontal and vertical canals have different pathways through the brain stem and cerebellum. It is the differentiation that has given the study of brain localization a tremendous impetus. Jones takes great pains to point out that this study is still in infancy and undoubtedly will be subject to many important changes. There is much to be added to our present knowledge and doubtless some of our present conceptions will be found to be erroneous.

In Part 1, the author introduces his subject by giving his conception of neuro-otology. He points out that, while our knowledge of the cochlear portion of the labyrinth has been intimate for a long time, we have had until recently only a vague knowledge of kinetic-static labyrinth. He then takes up in detail the practical value of the routine examination of the kinetic-static labyrinth to the general practitioner. He shows conclusively that no case of vertigo need remain obscure following a proper vestibular examination.

The chapter on aviation is of special interest, not only as a war problem, but in its bearing on aviation as a commercial and sporting enterprise.

The other chapters in Part 1 are devoted to sea sickness, syphilis, neurology, surgery, ophthalmology and otology. Each of these chapters is a most valuable contribution to the special field to which they belong.

Part 2 deals with the history of the development of neuro-otology with the anatomy and physiology of the labyrinth, eighth nerve, medulla oblongata, Pons, the peduncles, cerebellum and in part, of the cerebrium. The part on Cerebellar Localization is of particular interest and will appeal to the reader as an unusually clear conception of this much debated portion of the brain.

Nystagmus, vertigo and pastpointing are discussed in a most lucid and entertaining manner. The lecture of the examination of the auditory and vestibular apparatus should be studied with exceedingly great care as the findings and the consequent deductions are totally worthless unless the lecture is strictly adhered to in its every detail. The Jones chart is well worked out and complete. Without it an accurate picture is well nigh impossible.

The chapter on pathological considerations discusses neuro-otology in its relation to disease. Here we have the results of the practical application of the examination of the vestibular apparatus. A difficult subject is elucidated in the author's incomparably clear and concise diction. The hypothetical cases are well worthy of the closest study. A thorough understanding of them will place the otologist in a position to properlv interpret his findings in a given case.

The chapter on the analysis of pathological cases was written by Dr. Lewis Fisher. Dr. Jones and Dr. Fisher have been intimately associated in the study of neuro-otology. They have studied cases together and separately and have found that their conclusions coincided in a most amazing manner. Although they have worked together, they have not hesitated to take issue with each other. That they have been able to arrive at the same conclusions indicates the scientific accuracy with which they have conducted their researches. The analysis that Dr. Fisher gives of actual pathological cases is highly enlightening and should be of untold assistance to the student of neuro-otology. Dr. Fisher's presentation is clear and convincing.

In conclusion the reviewer wishes to call particular attention to the drawings, photographs and reproductions of the motion picture films. Without these the book would lose much of its lively interest and certainly a great deal of its value to the reader. Those who have had the opportunity of seeing the motion pictures as demonstrated by Dr. Jones cannot but feel that the medical world owes a debt of gratitude to him for his unstinted efforts to present a most difficult subject in a most convincing and entertaining manner.

The reviewer wishes to take this opportunity to express his fervid thanks to Dr. Jones and Dr. Fisher for the great inspiration which he received while a student in their school. C. G. Crane.

Pathological Technique. A Practical Manual for Workers in Pathologic Histology and Bacteriology, Including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By F. B. Mallory, M.D., Associate Professor Pathology, Harvard Medical School, and J. B. Wright, M.D., Pathologist, Massachusetts General Hospital. Seventh edition, revised and enlarged. Octavo, 555, 181 illustrations. Philadelphia and London: W. B. Saunders Co., 1918. Cloth, $3.75.

The seventh edition of Mallory and Wright's Pathological Technique will, without question, be accepted with the same cordial reception as its preceding editions. The book needs no introduction to laboratory workers. It is a standard.

The new edition contains additions, keeping pace with progress in the field of laboratory technique. Among the new procedures are: Goodpasture's stain for frozen sections, Graham's method for the oxidase reaction, Benians' method for the demonstration of spirochætes, Claudius' stain for flagella, and the classification of pneumococci from the standpoint of specific serum therapy.

It is noteworthy that the volume is essentially intended to be a practical one; only those methods are described which have received the stamp of approval from laboratory workers, and which can be carried out in any laboratory restricted to diagnosis. The clearness and brevity of the descriptions deserve special comment.

The authors are to be congratulated upon retaining the excellent standards of their little book, without which no laboratory library, however small, can do.

Max Lederer.

Quarterly Medical Clinics. A series of Consecutive Clinical Demonstrations and Lectures. By Frank Smithies, M.D., at Augustana Hospital, Chicago. January, 1919, Volume I, Number 1. Medicine and Surgery Publishing Company, Inc., St. Louis. Annual subscription, $5, paper; $8, cloth; single copies, $1.50, paper; $2.25, cloth.

This publication is somewhat analogous to the Murphy Clinics, inasmuch as it contains clinics by one man, except that it deals with internal medicine instead of surgery.

It is the reproduction in print of clinical demonstrations and lectures at the Augustana Hospital in Chicago.

In this, the first number of the first volume, fifteen cases are discussed much after the fashion of Cabot in his work on diagnosis. The heading of each case discussed gives merely the principal outstanding symptoms, while the diagnosis is left until proven by the examination of the patient.

There are photographic illustrations of patients, pathological specimens and apparatus, as well as roentgenograms where indicated. One is struck by the great thoroughness of the clinician and his wide grasp of many phases of internal medicine, and it is a question whether a monographic work such as this is really not better than a collection of articles by many contributors.

Certainly the contradiction and conflict of opinion of various writers is here avoided and there is no danger of confusion on the part of the reader.

If one may judge by the first number, this is destined to be a valuable and popular addition to medical literature.

W. H. Donnelly.

Historical Disorders of Warfare. By Lewis R. Yealland, M.D. 252 pages. 8vo. London and New York: Macmillan Company, 1918. Cloth; $2.75.

A very interesting work, dealing with the author's method of treating hysterical war neuroses, although the method is equally applicable to the treatment of the historical accidents of civil life. His endeavor is to cure his patients at a single sitting by means of normal suggestion plus a strong faradic current. His method is rather theatrical, as he makes use of a darkened room, locks the door, and informs his patient that he cannot leave until he is cured of his paralysis, aphonia, tic or whatever hysterical accident is present. It cannot be denied that his results are startling and show an almost monotonous success, and on the basis of "any means to an end," are absolutely justifiable. It is very likely that some of the more severe cases would not respond to any less impressionistic method, but one cannot help thinking that in many of the cases cited, methods that savor less of the professional "mental healer" would be equally successful, and, again, the question arises if slower re-education is not apt to have a more lasting effect; however, that is a matter for personal opinion, and any one reading the work will be well repaid and will learn many valuable lessons in the handling of this class of patients. Besides describing his method in detail by means of a large number of illustrative cases, Dr. Yealland prefaces each class of disorders with a carefully prepared outline of differential diagnosis.

The Medical Clinics of North America. Volume II, Number 3, November, 1918. (Philadelphia Number). Philadelphia and London: W. B. Saunders Company, 1918. Published bi-monthly. Price per year: Paper, $10; cloth, $14.

Nine of the nineteen articles in this number are devoted to the consideration of influena from the standpoint of bacteriology, complications, symptoms, prevention and treatment.

There are four articles on pediatric subjects, namely: "Influenza in Children," and "Feeding Babies During Their Second Year," both by Maurice Ostheimer; "The Cerebral Palsies of Children," by Charles S. Potts, and "Dilatation of the Colon in Children," by J. P. Crozer Griffith. Other subjects of importance discussed are "Sciatica," by Dr. Thomas McCrea; "Intraspinal Therapy in Syphillis," by Dr. Jay Frank Schamberg and Dr. Albert Strickler; "Medical Treatment of Biliary Affections," by Dr. Martin E. Rehfuss, and "Diabetes," by Dr. Leon Jonas.

In the short space of time which has elapsed since the appearance of the first issue of these Clinics, the excellent personnel of the contributors and the timeliness and thoroughness of their writings have earned for them a place in current medical literature which would somehow be hard otherwise to fill.

W. H. Donnelly.

Surgery in War. By Alfred J. Hull, F.R.C.S., Lieut.-Col. Royal Army Medical Corps; Surgeon, British Expeditionary Force, France, and Queen Alexander Military Hospital. Preface by Lieut. Gen. T. H. J. C. Goodwin, C.B., C.M.G., D.S.O.; Director-General, Army Medical Service. Second edition. 210 illustrations. P. Blakiston's Son & Co., Philadelphia, 1919. Price, $6 net.

Born of the travail of war, this volume, now in its second edition, has shown a growth commensurate with the times. Three years ago it was a small book which could be slipped into one's pocket. Now it has over 600 pages and is full book size. Six contributors have written special sections and the stamp of authority is added by the preface which is written by Lieut.-Gen. Goodwin, Director General of the British Army Medical Service, who is so well known in this country.

The binding, paper and illustrations are all excellent. It is doubtful if any other single volume on military surgery is so generally useful as this one.

Under antiseptic treatment a historical survey of the many antiseptics used and the methods is given. Four pages are given to Dichloramine T. It is especially recommended as an "inhibitor of sepsis."

The chapter on tetanus is especially good and that on anaerobic infections goes into great detail and has an extensive bibliography. There are four splendid colored plates of gas gangrene.

W. Miller, who writes on gunshot wounds of the chest, differs from the French school, headed by Duval, and states "It is not justifiable to perform thoracotomy, except, in emergency, without the aid of pressure anaesthesia or some form of differential pressure apparatus."

One of the most interesting chapters is that on gunshot wounds of the face and jaw, by H. E. H. Tracy. The forms of apparatus used in the control of fractures are minutely described and depicted. The subject of compound fractures is splendidly handled by the author with numerous illustrations.

Our own Lieut.-Col. Crile assisted in the preparation of the chapter on shock and furnished some of the illustrations.

The wealth of valuable information in this book should be applied to civilian injuries and not interred in a library because peace is at hand.

A Text-Book of Physiology: For Medical Students and Physicians. By William H. Howell, Ph.D., M.D., Professor Physiology, Johns Hopkins University, Baltimore. Seventh edition, thoroughly revised. Octavo, 1,059 pages, 307 illustrations. Philadelphia and London: W. B. Saunders Co., 1918. Cloth, $5 net.

Students and physicians who are familiar with any of the preceding revisions of this valuable work need not be told that it is as practical and thorough as its predecessors with the contents brought up to date. The author makes a much needed effort to get students to realize the fact that scientific explanations are "provisional only" and constantly subject to revision as new experimental information is obtained. The volume is composed of nine sections dealing respectively with: Muscle and Nerve; Central Nervous System: Special Senses: Blood and Lymph: Circulation: Respiration: Digestion and Secretion: Heat Production and Regulation; Reproduction. Among recent subjects dealt with are hormones and chalones, the thyroids, parathyroids, adrenals, hypophysis and pineal body, the fat-soluble and water-soluble vitamines, the physiological effects of alcohol, cell autolysis, the nutritive value of various proteins, Mendelism, and the relation of the X-chromosome to sex.

The author states that the chemistry of the change of sugar into fats "is not understood and cannot be imitated in the laboratory." Nothing is said of the rift in this dark cloud suggested by the Cannizzaro reaction, in which reductions accompany oxidations, nor of the separation of ions by cell membranes. The statement is made that "In the sugar the oxygen constitutes 53 per cent of the molecule, while in fat it forms only 11.5 per cent." The student can infer that the sugar referred to is dextrose or sucrose but what about the kind of fat meant? A fat containing much tri-olein and little of the higher tri-glycerides will vary greatly from one containing much, say, tri-lignocerin and little tri-olein. The oxygen percentages of these vary widely. In dealing with "Heredity" the student might have been told how variable the meaning of this word becomes because of the innumerable effects of the environment. The organism's inheritance is ever the same but with it identical in two, three or more cases the Heredity can vary widely according to circumstances. With the same inheritance a ripe apple may be rosy red or yellowish green, it may be large or small, sweet or sour, according to the conditions of its environment. The heredity differs in each case, but the inheritance does not. R. G. E.

Neurological Clinics. Exercises in the Diagnosis of Diseases of the Nervous System. Given at the Neurological Institute, New York, by the Staff of the First Division. Edited by Joseph Collins, M.D. Paul B. Hoeber, New York, 1918.

A series of cases selected from the bi-weekly conferences of the staff of the First Division of the Neurological Institute, about forty in number, presented by a dozen men. The care used in their preparation bespeaks the careful work in diagnosis of the institution they represent, for it is naturally upon diagnosis that the greatest stress is laid. The hope is expressed in the preface that the work may be of value to the general practitioner as well as to the neurologist. It is of unquestionable value to both in its present form, but the question may be raised whether future editions could be made more readable and instructive to the general practitioner either by appending a glossary of the more technical terms used by neurologists, or else by explaining their meaning upon their first appearance. The following terms, taken at random, will illustrate: "Rosenbach's phenomenon," "Hoffman sign," "Adiadochokinesis," "Astereognosis," "Oppenheim's sign," "Tactile agnosia," "Asymbolia," etc.

It is hoped that there will be many more annual editions published. F. C. E.

Lecons de Chirurgie de Guerre. Publiees sous la direction de Cl. Regaud, Professeur a l'Institut Pasteur, Directeur du Centre d'Etudes et d'enseignement de Bouleuse. Par MM. Guillain, Jeanbrau, Lecene, Lemaitre, Leriche, Magitot, Mocquot, Nogier, Okinczyc, Piollet, Policard, Roux-Berger, Tissier. Masson et Cie, Editeurs, Libraries De L'Academie De Medicine 120, Boulevard Saint-Germain, Paris, VI. 1918.

This is a volume of articles on war surgery published under the direction of C. Regaud of the Pasteur Institute in Paris.

There are thirteen collaborators, all medical officers in the French Army and teachers in the medical schools.

P. Lecene writes the opening chapter on "General Considerations of War Wounds"; A. Policard in the second deals with "Pathological Anatomy and Physiology," while the third, by H. Tissier, takes up the Bacteriology of Wounds."

The fourth chapter is also by Lacene on "Tetanus," the fifth is on "Post-Hemorrhagic Anemia and Blood Transfusion," by E. Jeanbrau, and the sixth on "Radioscopy," by Th. Nogier.

Other articles are on "Primary Suture of Soft Parts," "Disinfection and Secondary Suture of Wounds," "Amputations," "Wounds of the Joints," "Operative Treatment of Fractures," "Orthopedic Treatment of Fractures," and then a series on the injuries to the various parts and regions of the body. The illustrations are mainly diagrammatic and, of course, the paper and binding of the usual European degree of poorness, but the material presented is excellent and authoritative.

Any surgeon with a reading knowledge of French could not help but derive great benefit from a careful review and digestion of its contents.

W. H. Donnelly.

A Manual of Diseases of the Nose, Throat and Ear. By E. B. Gleason, M.D., Professor Otology Medico-Chirurgical College Graduate School, University Penn. Fourth edition, thoroughly revised. 12mo., 616 pages, 212 illustrations. Philadelphia and London: W. B. Saunders Co., 1918. Cloth, $3 net.

In the fourth edition of "A Manual of Diseases of the Nose, Throat and Ear," by Dr. E. B. Gleason, the author states in the opening paragraph of the preface: "This manual was written to supply students and general practitioners with the essential facts of Rhinology, Laryngology and Otology."

The essential facts only are given, but they are given in a clear, concise manner in the six hundred and sixteen pages and the large field of oto-laryngology is very fully covered.

The author gives the etiology, pathology, symptomatology and treatment of each disease. Many of the conflicting views as to treatment are omitted and only those that are generally accepted and tried are given. Emphasis is placed upon treatment other than operative, if that treatment will be of benefit in the particular case.

The book is brought up to date and outlines the recent work on such subjects as focal infection from the tonsils, testing the inner ear and its connections in the central nervous system, labyrinthitis and its treatment and intracranial complications from the ear.

The methods of the examination are gone into in detail, a part of the work that will be of especial value to the beginner.

There are a large number of illustrations, many of them from the author's specimens, and in the back of the book a number of pages are devoted to formulas. The index, a valuable part of any text-book, is a complete one and the paper and binding are good.

The book was written for the student and general practitioner, and the man doing special work only will miss many of the details and operations found in a larger work.

Seale Hayne Neurological Studies. Vol. I. No. 1. Oxford Univ. Press, 1918. Arthur F. Hurst, A.M., M.D., Editor.

These studies are from a neurologic department at Netley, instituted for war victims. As a military outgrowth it immediately suggests the hospital for nerve injuries from our Civil War, so brilliantly conducted by Weir Mitchell. An introductory word is by Osler.

Every article is in whole or in part by the chief editor. Pharyngeal Anæsthesia he shows to be non-hysterical, a sign which others must long since have found of questionable value. The supposedly diagnostic contractions of the field of vision are likewise relegated to the large bag of discards as induced by suggestion. He concludes that there are no positive signs of hysteria, that the only direct evidence is that of organic trouble. Hence the diagnosis of hysteria, including malingering, is only by exclusion. He supports this by many cases, and their rapid cure, largely at a single session, by frank persuasion and re-education.

It is inevitable that facts of this class, so widely noted in recent war work, will have a great influence on ordinary damage-suit trials, and compel a readjustment of attacks by our medico-legal lights. As demonstrations his cases are admirable. The possibility, however, remains that so-called hysterical stigmata are evidence of abnormal suggestibility and thus of potentially hysterical individuals.

The criticism may also be raised that his cases were largely mere malingerers (which he indicates they were in part), and that consequently his sweeping conclusions regarding hysteria lack warrant of fact. At any rate, he offers no light as to the character of hysteria. Nor is anything gained by attributing it entirely to psychic origin. On the contrary, every one knows that some individuals develop hysteria more readily than do others. And so far as present reports go, our examioners did succeed in keeping home more of these candidates than was done for the other armies; in other words, hystero-potentials can, to some extent, be spotted in advance. From these facts it is certain that there is something in the make-up of these individuals that distinguishes them practically from other persons. What we need is not so much destructive as constructive studies so that we can more readily and definitely recognize this type, even though full-fledged hysteria lacks stigmata.

While largely and confessedly following the lead of Babinski, as against Charcot, he has fun with him at one point as himself "a victim of suggestion."

Localized tetanus, other than the cephalic form, appears to be accepted as an occasional entity.

These "studies" are of inestimable value to all practitioners.

W. B.

A Text-Book of Home Nursing. Modern Scientific Methods for the Care of the Sick. By Eveleen Harrison. Second Edition, Revised. Published by the Macmillan Company, New York. 1918. Price $1.10.

This is the second edition of a little work which first appeared in 1900 and which had been reprinted eight times in the interval up to 1918.

It comes out at a particularly appropriate time, when so many nurses are in Red Cross and other national services, and when, in addition, the influenza scourge is still with us even in a modified form.

While intended really for untrained or home nurses it may be read with benefit by trained or graduate nurses, or even by the average physician, inasmuch as the exact method of performing the many duties is described tersely and lucidly.

Many a physician orders baths, packs, nutrient and other forms of enemata without knowing the exact method of carrying out these measures, all of which are set forth in this volume, with a full list of the articles required.

A striking and valuable feature of the text is the summary to be found at the end of each chapter.

In addition to general nursing measures, there are chapters on first aid in emergencies, on dietetics, and recipes for invalid cooking. On the whole, this may be said to be a very valuable and practical addition to the literature on nursing.

W. H. Donnelly.

Personal Hygiene and Home Nursing. A Practical Text for Girls and Women for Home and School Use. By Louisa C. Lippitt, R.N., Assistant Professor of Correction Exercises, University of Wisconsin. (In New-World Science Series, edited by Professor John W. Ritchie.) Illustrated. Cloth, vii+256 pages. Price, $1.28. Published by World Book Company, Yonkers, N. Y., 1919.

This little work is announced by the author as intended to be a practical text-book for girls and women for home and school use. It contains thirty-one chapters, twelve of which are given up to hygiene, posture and exercises. A chapter of great importance is that on the care of the mouth and teeth which, among other things, takes up focal infection, improper root canal filling, alveolar abscess and pyorrhea alveolaris, and which is illustrated by diagrams and radiographs.

Some excellent sound advice is given to young women on clothing, shoes, hygiene of the menses and constipation, as well as on the care of the eyes, nose, ears and throat.

A chapter on the effect of posture on health and efficiency contains some valuable material for the young, growing girl, and is well explained by photographs.

Home nursing is then taken up, with the treatment of emergencies and poisoning, as well as surgical first aid.

On the whole, the impression retained after reading the work is favorable, in spite of several errors, such as describing a positive Schick test as an evidence of immunity against diphtheria.

The language is not too technical for the lay reader and the text is condensed and paragraphed so as to render easy the finding of any given topic.

W. H. Donnelly.

Deaths.

William J. Bulger, M.D., Oswego, died March 3, 1919.

William R. A. Carley, M.D., Brooklyn, died March 11, 1919.

William P. Faust, M.D., Schenectady, died March 27, 1919.

Benjamin Fidler, M.D., New York City, died March 26, 1919.

Willis B. Harrison, M.D., Buffalo, died February 4, 1919.

George Hudson, M.D., Stillwater, died January 30, 1919.

Max Landesman, M.D., New York City, died March 16, 1919.

Daniel Lewis, M.D., New York City, died March 22, 1919.

James T. Meehan, M.D., New York City, died March 16, 1919.

Herman V. Mynderse, M.D., Schenectady, died March 5, 1919.

Ellsworth H. Noble, M.D., Elmira, died March 6, 1919.

Frank Van Fleet, M.D., New York City, died March 5, 1919.

Harry H. Weist, M.D., New York City, died March 6, 1919.

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ORIGINAL ARTICLES

CONGENITAL MALFORMATIONS OF THE SPINE.*

By CHARLES DWIGHT REID, M.D.,
SYRACUSE, N. Y.

IT is not my purpose to give you an exhaustive treatise on the etiology of congenital malformations of the spine, but simply to present to you a few general remarks on the subject, with lantern-slide demonstration of some different types of malformations which have come under my notice recently.

Unfortunately, most congenital spinal defects are not amenable to correction, and consequently we are forced to employ palliative measures in the majority of cases. There are several types of such malformations varying from slight irregularity in shape and characteristics of one or more vertebra to a complete absence of the same.

There are many theories as to the causation of such defects, and many authors have advanced theories and classifications, none of which are entirely satisfactory. The very number of these so-called classifications indicates the fact that we are still groping for the proper one. Among the possible causative factors may be mentioned:

1. Heredity. We are not able to say that a certain defect in one person will be shown in a series of cases in the same family, but it is a fact that close inquiry into the history will often show one or more probable congenital anomalies.
2. Maternal pelvic anomalies, maternal trauma, faulty nourishment from the maternal circulation, oligohydramnios, amniotic adhesions, placental malformations, multiple pregnancies.
3. Intrauterine diseases of the foetus, such as rickets, syphilis, et cetera.
4. Anomalies of muscular development.

Thomas[1] advances rather strongly the theory of asymmetrical attachment of muscles as cause of congenital scoliosis and cites several cases in which the trapezius was differently attached on the two sides, and in one case completely absent on one side. This he considers to be a cause of the defective development of the vertebrae which is seen in these cases.

SPINA BIFIDA

One of the commonest malformations is in spina bifida. This is due to a failure of the vertebral arches to unite, leaving a space which may be only covered with skin or fascia through which space a hernia of the cord and its membranes may take place.

There are various theories as to the cause of this condition. One which has gained considerable credence is that there is a hyper-secretion spinal fluid with resulting pressure along the neural canal, so that the normal closure does not take place.[2] This theory of hyper-secretion of spinal fluid has been given credence because of the fact that, very often after plastic operation with closure of the opening has been done, a hydrocephalus develops, or, as is frequently the case, an already present hydrocephalus becomes greater and results in the death of the child.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 21, 1918.

Occasionally an opening may be present, but owing to strong fascial coverings there will be no hernia of the membranes. This condition may be associated with a growth of hair over the area and often also there may be defects in the lower extremities, such as club feet, and the like.

Frequently in these cases of spina bifida, especially those in which there is a hernia of the cord, there will be loss of control of the sphincters. In such cases, as a rule, operative procedures for closure of the vertebral openings do not result in much improvement,[2] in fact several writers have reported series of cases after operation, and their percentage of late good results is very low. Most writers agree that the age for successful operation on spina bifida is under two years, and some say the time of choice is within a few hours of birth. Harmer,[3] of Boston, reports 34 cases with an operative mortality of 44 1/10 per cent. Ten he reports as being well. Jones[4] reports 19 cases, of which 5 were operated on, with one death. Lovett[5] reports 24 cases, 9 died within 3 weeks of operation. He also quotes several European writers with a total of 88 cases, with 30 deaths from operation. Harrar[7] reports 59 cases; 31 operated, 18 died from 1 to 22 days. Thirteen children recovered from operation, 9 of whom died within three months; one perfectly well at the age of 3. So, from this list of cases reported by well-known surgeons, it is evident that operations in these cases should only be undertaken in selected cases and after serious consultation with members of the family, to whom the dangers should be explained, and with their consent.

A case came to the dispensary recently for treatment—a girl, 14 years old, large and well developed for her age, with no control over the sphincters. She was mentally perfectly developed for her age, and the parents were very anxious to have something done for the distressing condition. She presented a tumor about the size of half an orange over one side of the lower lumbar region, and by palpation a diagnosis of spina bifida was easily made and confirmed by X-ray. This tumor had been present since birth and at some time during her first couple of years, some physician had made a diagnosis of lipoma, and had almost operated for its removal. Since that time she had had no treatment. I explained the situation to the mother and evidently scared them off as they have not since put in an appearance.

Another case was referred to me about a year ago with a diagnosis of infantile paralysis: A child, six years old, who had never been very well, being subject to gastro-intestinal upsets at fairly frequent intervals. During the summer of 1916, at the time of the infantile paralysis epidemic, he had one of his regular attacks associated with vomiting and diarrhoea. His mother said this attack differed in no way from his usual attacks, lasting about 48 hours, and that he did not complain of pain or weakness in any part of the body during or after this time. On close questioning she said that she had noticed for about a year before this that the child was rather clumsy and seemed to tire easily. He came to me with a well-developed club foot, which had been diagnosed by his attending physician as a deformity following infantile paralysis. On examination, I found a well-marked doubling of the spinal process without hernia in the lower lumbar and sacral regions. The X-ray confirmed this finding. From the history of the case and the radiographic findings I am inclined to regard it as a case of spina bifida occulta rather than a case of poliomyelitis. The foot has not responded so well to treatment as would a recently developed deformity.

CONGENITAL SCOLIOSIS

Before the days of the X-ray all lateral curvatures of the spine which were not visible at birth or soon after were considered to be due to faulty posture, infantile paralysis, or some unknown causes, and those which were at once noticed were attributed to faulty position in utero, multiple pregnancies,[6] etc. It is very frequent now to find some vertebral defect responsible for this condition even in adults in whom the curve may have been noticed within a few years. Tubby[8] classifies such cases under two general headings:

"Class I. Vertebral deformities without malformations of other parts.

"This class comprises:

"1. Increase in the number of vertebrae.

"2. Deficiencies of them, or parts of them.

"3. Synostosis.

"Class II. Vertebral deformities with malformations of other parts.

"Such as fusion of ribs, suppression of portions of ribs, cervical ribs."

Various writers[9,10,11,12] have described cases in which there were extra vertebrae, such as 13 dorsal or 6 lumbar. In these cases there usually is defective formation of the extra or other vertebrae. There may be a normal number of vertebrae but one or more of them may be defective, as in a case (of which I shall show a lantern-slide) in which there is a wedge-shaped first-dorsal vertebrae with a rib on one side only.

This case was referred to me recently, complaining of backache in the upper dorsal and cervical regions. This patient is now 22 years of age, and the curve had not been noticed until the child was 10 years of age. At which time she was having considerable difficulty to get along in school because of nervousness and excitability. Apparently no treatment was undertaken, and until very recently she had been able to be about, although with gradually increasing severity of pain in the back. Examination shows a left cervico-dorsal, right dorsal, left lumbar curvature. There is apparent absence of the first and second dorsal vertebrae with a prominence to the left and rather sharp inclination to the right in this region. There is also a difference in the development of the trapezius and some asymmetry of the head. The X-ray shows two defective vertebrae, with eleven ribs on one side and twelve on the other, and a well marked angulation in the affected area.

The treatment of these conditions is not simple, but often a good deal can be done to relieve their pain, and frequently an improvement in the extent of the curve can be obtained. The methods of treatment, of course, vary widely. Forced correction with plaster jackets for a period of several months, followed by a course of proper gymnastic exercises will usually bring about some improvement. This is the course of treatment I have begun in the above case. In this case I have applied a plaster jacket with collar, and at the time of the application got a considerable degree of correction of the curve. The treatment is only just begun, so I cannot report progress as yet. The bone-graft operation, either as proposed by Dr. Albee or Dr. Hibbs, may be employed. Dr. Hibbs, especially, reported several cases of scolioses of all types about a year ago, in which his operation had been done with relief of symptoms and some improvement in the extent of the curve.

Another child, age 12, was referred to me by a school-physician because she could not keep up with the other children in the gymnastic exercises at school, which apparently consisted of considerable running and jumping. She did not complain of any pain and no curvature had been noticed by her family or by the school physician. On examination I found a moderate degree of lower lumbar curvature with a rather marked lordosis, one-inch shortening of the left leg, and a marked difference in the size of the iliac crests. X-ray shows a difference in the size of the ilia, a one-sided defect of the sacrum, and lumbar vertebrae piling on each other so that it is rather difficult to make out just how many there are, or their condition, which will be shown on the lantern-slide. Such a case as this is particularly interesting because it might very well have escaped notice until the child grew up and attempted to raise children of her own when undoubtedly, owing to this malformation, labor would be dangerous, if not impossible, and the likelihood of congenital defects in her children from faulty position would be increased.

Other Malformations.

It is important to mention cases of so-called sacralization of the fifth lumbar, in which this vertebra takes on the characteristics of the sacral vertebrae and is frequently irregular in that one side will be more markedly defective than the other. These cases, Goldthwaite and others consider definitely causes of backaches, and in several cases operation with removal of the greater part of these large processes has resulted in cure. It must be remembered, however, that the transverse processes of the fifth lumbar vertebra are a bit difficult to reach on account of their position. Other methods, such as fixation by bone-graft, have been used with varying success, owing to the difficulty of firmly implanting a graft in the double-curve position.

A case was referred to me a day or two ago for persistent backache, a woman of 40, who has had two children, both difficult instrumental deliveries. In this case there is a well marked anomaly of the fifth lumbar with a markedly larger transverse process on one side than on the other.

An interesting case of anomaly of the fifth lumbar with trauma, is a laborer who fell a short distance and was generally bruised and had a cut on the head. This was treated by the company physician, who paid very little attention to the complaint of slight pain in the back. The man was in bed for three weeks and then was able to drag himself back to work and was put at light work. He worked with an occasional lay-off for two years, during which time he was constantly suffering pain in the lumbar region with increasing disability. He was treated by several physicians during this time, none of whom considered the case serious enough to have an X-ray until two years after the accident. The last physician he went to took some X-rays of the back and referred him to me. The X-rays showed a bifid spinous process, one side of which had been broken at the time of the accident. This case was operated on by Dr. C. E. Coon and myself, in Syracuse, at which time we found confirmation of the X-ray diagnosis. We inserted an Albee graft and the back is now strong and painless.

Cervical Rib.

Another condition which may or may not be associated with vertebral defects is cervical rib. This fairly rare condition may or may not give rise to symptoms, depending on the size of the rib and whether or not it causes any pressure on the vessels or nerves of the neck. It is usually an unilateral condition, though bilateral ones have been reported. They are usually attached to the seventh cervical vertebra. The proper treatment is removal if there are symptoms.

Conclusions.

1. Congenital effects of the spine are by no means as rare as they were formerly supposed to be.

2. Radiographic study of all cases complain-

ing of backache, or cases presenting visible deviations from the normal curves, no matter how slight, should be made, as frequently the diagnosis will be at once cleared up and the patient saved a long, expensive period of medication or inefficient mechanical treatment, and kept out of the hands of charlatans and quacks.

3. Treatment of congenital scoliosis in patients of adolescent or adult age is frequently more satisfactory than in cases of acquired curvatures.

4. Operative measures are for carefully selected and skilled operators.

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THE ROLE OF THE ANAESTHETIST IN THE SURGICAL TEAM.*

By **JOHN J. BUETTNER, M.D.,**
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MANY times have surgeons, when present at anaesthetic meetings, expressed the thought that many of the papers should have been delivered before surgeons as well as before anaesthetists. It is a matter of pity that there is not a greater interchange of papers in both surgical and anaesthetic sections. While sectional meetings have their advantages, very often there would be a greater advantage in a general meeting where special subjects are brought into discussion before the whole medical meeting.

In considering team work in surgery, or, to be more specific, the rôle of the anaesthetist in the surgical team, there is a great deal to be said in its favor. Every surgical operation is, or, at least, should be, undertaken for the benefit and welfare of the patient. Any factor or factors that will be of service to the ultimate success of a surgical operation should be utilized. The writer believes that team work in surgery spells success for both patient and surgeon.

The progress in anaesthesia has been so marked that the anaesthetist is, at least, being recognized as a specialist. Dr. W. H. Long, of Louisville, Ky., in his presidential address, at the organization meeting of the Inter-State Society of anaesthetists, in 1915, very forcibly shows that the anaesthetist should be recognized as a specialist and accorded the same dignity and standing that other specialists receive. In order to attain this exalted position, however, hard work, special study, and proper training are required.

In the past, anaesthesia did not receive the recognition or attention it merited. The past ten years have shown wonderful progress in the administration of anaesthetics and in perfecting the purity of the anaesthetic agent. But even this did not prevent accidents or overcome many unpleasant after effects, such as persistent nausea and vomiting and perverted functions of various organs. This gave an opportunity of study and coöperation between surgeon and anaesthetist, tending to safeguard the patient and make pleasant the convalescence. In this connection, let us also give due praise to the laboratory diagnostician and the urologist for their great efforts in behalf of the patient's welfare and the comfort of the surgical team. It was found in this investigation that proper preliminary examination and preparation of the patient were necessary to bring about the safest and best results. But before these results can be obtained, we must train the anaesthetist. To do this, our medical colleges must so arrange the curriculum that it will be possible to have the student receive both theoretical and practical knowledge in anaesthetics. Then, when this student accepts an interneship, he will have some working knowledge of anaesthetics, which should be further supplemented by the guidance and instruction of an expert anaesthetist.

It is just at this great crisis, with a continual cry for more medical men, that our medical students should have the training to enable them to give at least a good ether anaesthetic. Now, as never before, has the anaesthetist received recognition and done wonderful service for his country.

Dr. Willis D. Gatch, in a paper in the *Journal of A. M. A* of May 4, 1917, entitled "Anaesthesia in Curriculum and Clinic," outlines a plan of instruction that is worthy of attention. He says also: "Anaesthesia is not an isolated topic to be jammed somewhere into the medical course, but it is a fundamental principle, like asepsis, which must be applied to almost every phase of surgical treatment."

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 21, 1918.

Proper training of the medical student will impress the importance of anaesthesia on him and will be an incentive to create further study and greater perfection of technique. In this way, will anaesthesia be kept in the foreground, and its administration made a real art.

Surgeons are endeavoring to limit the practice of surgery to those who have received proper training and who show good surgical judgment as well as perfected technique. Why then should not anaesthesia be delegated only to those who have shown proper qualifications, rather than have anyone give the anaesthetic? In this way will the anaesthetist be fully competent to assume his place, not only as the administrator of the anaesthetic, but also as one of the consultants in the surgical team. In this team, he will be a comfort to the surgeon, a guardian angel to the patient. Being accustomed to the method of the surgeon, he will be able to use a minimum amount of anaesthetic, he will be able to direct the proper position of the patient on the operating table and facilitate the surgeon's work. There will be a minimum of time consumed with the operation. There will be no occasion for the remark as made by Dr. C. H. Gallagher, in the Anaesthetic Supplement of the *American Journal of Surgery* of April 18, 1918, entitled "Reforming the Surgeon," wherein he says: "One of the most astonishing things I know is the capacity of the average surgeon to resist the advance of the art of anaesthesia."

There must, at all times, be coöperation between surgeon and anaesthetist. The real truth of this statement can be appreciated, when we consider the remark of a surgeon who said he could spoil the best anaesthetic by his conduct at the operative site. Fortunately, this condition does not exist.

As further proof of the appreciation of expert anaesthesia, I quote from an article by Dr. T. L. Dagg in the N. Y. MEDICAL JOURNAL of October 30, 1915, who says: "The physician or surgeon is not doing his full duty to the surgical patient unless he appreciates the importance of the safest possible kind of anaesthetic, as well as all other factors of safety at his command, to insure the comfort of the patient and the success of the operation."

As an example of enthusiasm of team work, I refer you to an article of that title by Dr. C. W. Moots, of Toledo, Ohio, in the Anaesthetic Supplement of the *American Journal of Surgery* of October, 1916. He emphasizes the value of expert anaesthesia as being essential to the patient's welfare. In all clinics where team work is practiced the patient goes to the operating table properly prepared except, of course, in emergency cases. The anaesthetist has full knowledge of the examination of the patient, in consequence of which he has chosen the anaesthetic best suited for that patient. Too often is the anaesthetic chosen to fit the surgeon rather than the patient. The anaesthetist should choose the anaesthetic. There should be no routine anaesthetic. It is conceded that ether, especially in inexperienced hands, is the safest anaesthetic. It is also a fact that nitrous oxide and oxygen is the safest anaesthetic known in experienced hands and, fortunately, is gaining in favor.

I wish to emphasize one contra-indication to nitrous oxide oxygen anaesthesia, viz., the surgeon who is not accustomed to work with it only on what we may term specially indicated cases. When one considers the pleasant induction and awakening of a gas-oxygen anaesthesia, and also the happier convalescence in consequence thereof, it should behoove every surgeon to accustom himself to working with this type of anaesthesia.

The writer believes that the surgeon lays too much stress on the ultimate outcome of the operation, rather than upon a pleasing ante-operative thought and a happy, early convalescence. It is true that in spite of all care and preliminary precaution, disagreeable after-symptoms will arise. Nevertheless, in a great majority of cases, the whole surgical history may be made far from unpleasant. The patient, in fact, might also admit that they "enjoyed" poor health. Very often do we meet patients who have no dread of the operation, but who are very fearful of the anaesthetic. In fact, the patient may even procrastinate, in consequence of this dread, to their own doom.

In scanning medical literature, one is impressed with the great progress made in all branches of medicine. One is further impressed with the marked tendency; yes, necessity, of specialization. Every specialist finds that he has a task in keeping up with his own particular branch of medicine. In view of this fact, it certainly seems logical for the anaesthetist to have full charge of his domain, rather than have the busy surgeon exercise his power over that domain, as has been the custom in the past. Even though the surgeon is the responsible party in all operations, he is safeguarding himself and minimizing the tendency to accident and unpleasantness, by taking into his team an expert anaesthetist.

In closing, I wish to make a plea; first, for greater encouragement along anaesthetic lines in the medical colleges and, later, in the hospital. Second, for greater coöperation of surgeon and anaesthetist. Third, more frequent interchange of papers in both anaesthetic and surgical societies.

THE DYNAMICS OF ABDOMINAL HERNIAE.*

By HARRY R. TRICK, M.D., F.A.C.S.,
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THE great number of surgical procedures that have been devised for the radical cure of abdominal herniæ (particularly of the inguinal type) is sufficient commentary on the lack of unanimity as to the character of the forces concerned.

It may be argued that we are more interested in the *cure* than in the *cause,* but therein lies the explanation for the divergent opinions as to the most desirable method of cure.

We have been attracted by the defect and its consequent distortions rather than to a consideration of the forces concerned in its development.

No operation yet designed is proof against recurrence and it is not likely that any operation will be developed that will guarantee one hundred per cent of cures, because of the inherent mechanical faults of our anatomy rather than to faulty technique.

The successful repair of an abdominal hernia depends primarily upon an appreciation and understanding of the forces that produced it; then the appropriate re-arrangement of the tissues to resist or deflect these forces suggests itself.

In spite of the risk of appearing presumptuous, the writer desires to suggest a theory for the development of abdominal hernia that differs somewhat from those that are generally accepted.

It would seem much more reasonable to suppose that this particular idea, instead of being new, must have been long since thought of and perhaps discarded, but he has found no such exposition nor arguments tending to disprove it. Therefore, because the idea has afforded him a clearer conception of the forces concerned, he feels impelled to present it, for what it is worth, with the hope that it may help some other surgeon in his efforts to repair a defective abodominal wall.

In order to formulate a new theory for the pathogenesis of abdominal herniæ, it would seem advisable to review briefly the generally accepted causes and to assume a common definition.

The causes may be grouped under (1) contributing causes, such as developmental defects; weakness of the abdominal wall, due either to accident or disease; erect posture, elongated mesentery, phimosis, stone in the bladder, ascites, tympanites, large abdominal tumors, etc., and (2) active or exciting causes, such as coughing, sneezing, violent muscular effort, abruptly applied; in other words, such forces as tend to increase intra-abdominal pressure. Other items may suggest themselves, but these are sufficient for our purpose.

Broadly speaking, the definitions of a hernia amount to this, viz: "A hernia is the *protrusion* of an organ into or through its surrounding wall."

The only original idea of this paper concerns certain details of the mechanical forces involved and hinges upon a literal acceptance of the definition just cited.

The word *protrusion* implies a force from behind of sufficient degree to extend or project something beyond a usual limit. As applied in this instance the force from behind becomes increased intra-abdominal pressure, so called, and the usual limiting or resisting structure is the abdominal wall, more strictly speaking, the transversalis fascia.

What is "intra-abdominal pressure?"

It is the mechanical equilibrium between the abdominal wall and the organs it encompasses, i. e., static or potential energy.

"Increased intra-abdominal pressure" shows a loss of this equilibrium; either the contained organs increase their dimensions and the abdominal wall is on the defensive or the abdominal wall contracts and the contents of the abdomen are on the defensive. It must be a very variable quantity.

Since there is normally no free air nor fluid in the abdominal cavity, the words, "increased intra-visceral pressure," would seem to describe the situation more literally.

We all have realized that a very hearty dinner causes an "increased intra-abdominal pressure," but it isn't a recognized cause for abdominal herniæ.

Tympanites from an obstruction of the bowel, low down, may cause an enormous increase of intra-abdominal pressure, but I haven't seen a case of abdominal hernia from that cause nor have I found a case recorded. Instances of the bowels having been distended to the point of rupture by the injection of air under great pressure are occasionally reported, but even this violence is not a recognized cause of hernia.

A largely distended bowel does not readily adapt itself to the slits through which it must pass in order to become a hernia. It is too taut—like a drum head. The other extreme, an absolutely collapsed bowel, would present no more likely possibilities because it contains no potential energy in the form of intra-visceral gas or liquid.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 21, 1918.

Ascites may develop a sac, may fill a preformed sac and may even distend it, but that does not make a hernia. It is rather a hydrocele communicans.

It is not a hernia until some organ is forced into the sac. Naturally, a sac that has been considerably distended by fluid under pressure, accommodates an organ much more easily than a sac that has never been so distended, but the vast majority of abdominal herniæ have no history of ascites, so we must look further for our explanation.

Some condition midway between extreme distension and collapse of the bowel would seem to possess the greatest possibility for producing an abdominal hernia.

This is the suggested modus operandi—a loop of flaccid bowel is located opposite the internal ring or femoral ring or some other weak spot (usually the point where some blood vessel pierces the transversalis fascia) when it is suddenly exposed to concentric compression by the violent contraction of all the abdominal muscles, including the diaphragm, levator ani, etc.

This violent compression causes the intravisceral gas to force a diverticulum of the bowel through the weak spot. When the force is released the bowel may fall back, but the distension of the opening thus caused makes a repetition much easier and each repetition increases the size of the protrusion or hernia.

Nature may attempt to repair the damage by placing a portion of the omentum over the opening, but if the above-mentioned series of events should be repeated many times the piece of omentum would be hammered into the opening and would become a wedge instead of a plug.

If the diverticulum, just mentioned, should be grasped and held by the edges of the opening through which it has passed we would have a Littre's or Richter's hernia—a relatively rare type.

As considered in this thesis the only rare thing about a Littre's or Richter's hernia, would be the strangulation. In other words, the strangulation represents an accident to a hernia that was "nipped in the bud."

This theory applies equally well to all varieties of abdominal herniæ, whereas, the congenital theory has a limited applicability.

The only part of a hernia that might be congenital is the sac, and even the sac may have been developed by the application of the forces just mentioned during intra-uterine life.

With those points in mind, the proper treatment of a hernia becomes a matter of applied mechanics.

The simplest solution of the problem would be the application of some device (fitting a truss) over the weak point in the abdominal wall to prevent the protrusion of the viscera.

This has an alluring sound to the uninformed and in occasional instances is the only solution.

Some herniæ in children are apparently cured by this method and others in adults are fairly amenable to the properly fitted truss. Also the hopelessly incurable, as well must receive some support, so we will always have the truss with us, although at its best it is only a good makeshift.

In the vast majority of cases the truss should be mentioned only to be condemned, for several reasons. In the first place, it undoubtedly never cures; that is, it never approximates the tissues in a manner to make them most resistant to increased intra-visceral pressure. In the second place, to be most efficient, the pad of the truss must press directly into the defect through which the viscera might escape, and in many instances the pressure of the pad itself gradually enlarges the opening it is intended to close. Third, a truss is generally an annoying piece of wearing apparel, particularly in hot weather and should be frequently changed. Fourth, even a properly fitted truss may become displaced and at once becomes a menace. A displaced pad or an improperly fitted truss is worse than none at all, because of the added risk of trauma to the viscera that may escape under it.

When it appears necessary to fit a truss the condition should be carefully considered, the fitting supervised and subsequently inspected several different times to the end that its greatest efficiency be maintained or that other measures may be instituted.

The operation for the radical cure of hernia (herniorrhaphy) is the only logical treatment when not definitely contra-indicated.

There are few contra-indications, e. g., acute exanthemata, infection in vicinity of hernia, etc.

The only contra-indication in strangulation is a moribund patient.

No attempt will be made to describe the various operations devised to cure a hernia, they are legion and all are based on the Bassini operation and aim to obliterate the defect in the transversalis fascia through which the organs escape. In most instances obliteration of the defect in the transversalis fascia is sufficient. Tying off and displacing the neck of the sac is not enough. No amount of buttressing the tissues in front of the opening is as efficient.

Moschowitz reports a series of cases in which he repaired only the defect in the transversalis fascia; the other structures were approximated in their original relations and his results were exceptionally good.

No operation should be followed blindly.

Many times unexpected conditions are found which make it necessary to modify the operation originally planned for a certain case, so every surgeon should be resourceful that he may adapt himself promptly and confidently to the unexpected; the chief aim being to make the transversalis fascia invulnerable at that point.

In conclusion, I wish to present these points for your consideration, viz:

1. The most potent force in the production of abdominal herniæ lies latent *inside* the bowel and is applied from within, outward, i. e., increased intra-visceral pressure due to concentric compression exerted by the muscles of the abdominal wall.
2. Developmental defects do not cause herniæ, but they represent the sites of potential herniæ and are more probably the result of this force applied during intra-uterine life.
3. Proper repair of the transversalis fascia determines the integrity of the abdominal wall at that point.

This theory differs from the theory suggested by Alexis Moschcowitz, only in an attempt to describe the forces in detail.

Although I was not familiar with Moschcowitz's work until this idea prompted a study of the literature, I wish to acknowledge my indebtedness to him for the encouragement I received from reading a few of his papers on the subject and would urge all who are interested to read his article on hernia as it appears in Johnson's Operative Therapeusis.

THE CARE OF CHILDREN BEFORE AND AFTER TONSILLECTOMY.*

By CHARLES HENDEE SMITH, M.D.,

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THERE are certain medical aspects of the operations upon adenoids and tonsils the importance of which is commonly overlooked. The operation is often considered by the parent to be a minor one. The pediatrist or family physician may be consulted as to its desirability, or he may be ignored and the child may be taken directly to the throat specialist. There are many possible ways in which the child may fall between two stools to his great detriment in these circumstances.

If the child is referred by the pediatrist or family physician to the throat specialist, the latter often leaves the preparation and after treatment entirely to him. This divided responsibility is almost sure to lead to misunderstandings and mistakes so that essential details are frequently omitted.

In case the physician is not consulted then the laryngologist assumes the entire responsibility, but too often the specialist sees only the throat and does not think it necessary to consider the child.

In the text books on pediatrics and diseases of the throat, the matters of preparation and after care are very incompletely covered or omitted altogether.

At the present time we have passed far beyond the day when the tonsil was lightheartedly clipped in the office or clinic. Tonsillectomy is very nearly a major operation, and every child who has to undergo it is entitled to as thorough preparation, to as much thought, and to as careful after treatment as if he were to have his appendix removed. Neglect to give proper care before and after the operation may be the reason that the results are not obtained which were promised the parent and expected by the physician.

The scope of this paper does not cover the indications for tonsillectomy as far as the tonsils are concerned. Let us take it for granted that there are good and adequate reasons why the tonsils should be removed. There remains a question to be answered, "Is the child in fit condition for the operation?" The answer to this question may be determined only by a careful examination and study of each child, to determine as far as possible whether he has enough reserve resistance to carry him through the operation and its consequences. It is not always easy to accurately estimate the recuperative power of any given child. A safe plan, however, is to carefully rule out all conditions which contraindicate the operation, and to get the child into the best possible condition before it is performed.

A very frequent mistake made, especially in outpatient work, is to railroad to the throat department for operation all children who are referred by school nurses or other agencies, if the tonsils are in the least enlarged. The rule at Bellevue Hospital is that every such child shall have an especially careful examination, and due consideration shall be given not only to the indications for operating on his tonsils, but also to his general condition and his ability to stand the operation.

Children who are much underweight often lose an excessive additional amount after tonsillectomy. In the Nutrition Class at Bellevue we have found that it is better to try to get markedly undernourished children into somewhat better condition before subjecting them to this added strain. If the operation is done when a child is already at low ebb, it may take months to recover the extra lost weight.

Marked malnutrition may be the result of obstructed nasal breathing or absorption from diseased tonsils. It may, however be due to entirely different causes. Tuberculosis is one of the most common reasons for undernutrition. It must be constantly thought of in the case of every child who is underweight, or who does not gain at the average annual rate. The medical profession must learn that in childhood tuberculosis is rarely pulmonary, and that signs in the lungs are not to be expected and relied upon for diagnosis. The disease is lymphatic in the majority of cases, in the bronchial, mesenteric or other lymph nodes. The diagnosis must be made from the undernourished condition—the failure to gain weight under proper conditions, the positive Von Pirquet reaction, and the irregular temperature when the disease is at all active. The X-ray may aid but may prove disappointing.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 22, 1918.

It is a frequent occurrence for me to have to recall these facts to the interne or young physician who sees only the enormous tonsils. Children who have symptoms of active tuberculosis as evidenced by an irregular fever, should never be operated upon. If the disease is latent and if the child can be made to gain weight under good conditions, the operation may be safely performed, when it is distinctly indicated. It is a very shocking thing to remove a child's adenoids because he needs more breathing space and is not gaining, and to have him promptly develop a tuberculosis meningitis, or general miliary tuberculosis.

Hemophilia also has embarrassing possibilities. A careful inquiry into personal and family history as to bleeding should always be made. It is well to bear in mind that the transmission is from the male through the female to the male, and that girls are never hemophiliac unless both parents have been so. In taking histories of boys the maternal grandfather and uncles are the persons to be inquired about especially. In every case of the slightest suspicion a test of the blood coagulation time must be made.

Heart disease is no contraindication unless there are symptoms of decompensation. The urine should be tested in all cases. Diabetes or nephritis must be ruled out, or disaster may result from the operation.

Other diseases, especially leukemia, Hodgkin's, syphilis, may cause enlarged lymph nodes and suggest the advisability of tonsillectomy. A blood examination beforehand will sometimes divert a distressing situation after an operation.

The essentials of the preparation for the operation are simple and not numerous. They should be written out or printed in full for the mother so that there may be no possibility of mistake. The following simple routine is given each of my patients:

Calcium lactate, 5 to 15 grains after each meal, is given for two days before the operation. This is easily taken in powdered form mixed with a little water, to which may be added a little sugar if necessary. It seems to have distinct value in making the blood coagulate more quickly and thus lessens hemorrhage.

Liquid petrolatum, containing ⅕ to ⅗ per cent menthol (1 to 3 gr. to the ounce) is dropped into the nose with a medicine dropper three times a day for several days. Children rebel at strong menthol solutions and these have no advantage over the weaker ones. If there is much retention of secretions, or if the nasal discharge is at all mucopurulent, argyrol 10 to 20 per cent may be substituted for the mentholated albolene.

If the operation be done at the most desirable time of day—early in the morning—the child receives a light supper and no breakfast. If it must be done later, a cup of broth may be given for breakfast, and no food for four or five hours before the operation. A laxative is given the night before in sufficient dose to insure a good movement in the morning. Milk of Magnesia for younger children, cascara, or phenolphthalein for older, are usually vigorous enough, but are ordered in somewhat larger dose than the child ordinarily receives. Calomel or castor oil are not necessary. An enema is ordered one hour before the operation if the bowels have not moved thoroughly.

A word about the anaesthetic may be permitted on the ground that this is ofen left to the pediatrician.

Ether on a cone or mask is used most often for young children. Gas followed by ether is better for older children. It is difficult to keep a large child under the anaesthetic for a tonsil dissection, and therefore it is the habit of many anaesthetists to blow vapor into the mouth or into the pharynx through a nasal tube. It is almost impossible to concentrate the ether vapor sufficiently in this manner, however, and chloroform vapor is being substituted by the best anaesthetists. This is blown into the open mouth by a simple blowbottle arrangement such as can be made with a small bottle, rubber cork pierced by two glass tubes, an atomizer bulb and a catheter. Several of the best laryngologists in New York insist upon this gas, ether, chloroform sequence, because the patient can be held under the anaesthetic easily, there is less stimulation to the secretions, less bleeding, and the danger seems to be negligible. Needless to say, the chloroform must be given with care.

The post operative care of the patient has little that is startling, yet the few essentials are of no small importance. They are too frequently neglected.

The first point in the after treatment is the administration of something to relieve the pain during the first few hours. It is the usual custom to let the child cry and toss about until he falls asleep exhausted, two or three hours after coming out of the anaesthetic. There is no doubt that there is great difference in the amount of pain suffered by different children. Younger children have very much less pain than older ones, but when they do suffer they are more terrified and struggle more. It is my custom to give every child a hypodermatic of codein phosphate as soon as he shows any sign of discomfort and begins to rouse from the anaesthetic. The crying is reduced to a very short time. The child usually goes back to a quiet sleep and the parents have a great sense of relief. When no anodyne is given the child often cries two or three hours and the nerves of the already anxious parents are unnecessarily further lacerated. There is no reason why a child in pain should not have an opiate—and if the pain were from a laparotomy wound he would have it. In many instances the pain in the throat is much worse than that following what is supposed to be a more serious operation. The crying and struggling also predispose to hemorrhage without doubt, and it is important to reduce them for that reason. For a child of three ¼ grain of codein phosphate usually suffices; older children may receive ½ to ⅔ grain.

The child should be placed in a quiet, dark room with sufficient fresh air, but with no direct draught upon him. The mother often has better judgment than the trained nurse as to this matter, and as to the amount of bedclothes necessary. One of my patients contracted a severe bronchitis in a hospital because the nurse removed the undershirt in which the child was accustomed to sleep, put on a thin nightgown, and made the bed up so tightly that the single blanket left an open space on either side of the child. The mother protested in vain. This little girl was very sick for two weeks as a result and made a slow convalescence.

The parents must be warned not to talk to the child and to keep the room quiet, since the sleep is usually very light. Absolute rest is the best thing that can be given at this time. When two children are operated upon at once they should be kept in separate rooms so that they will not waken each other.

The matter of hemorrhage concerns the operator in main, but if the after care is left to the pediatrist he must be prepared to meet it. The child must be watched as to visible bleeding, the amount of blood vomited, the color, pulse and the appearance of air hunger. The nurse must be instructed to apply iced cloths to the face if there is undue bleeding, and to notify the physician early rather than late.

The physician must be ready to deal with hemorrhage. The first essential is a good light, as nothing can be done without one. A good head light, or an electric lighted tongue depressor, or even a pocket flash light is invaluable. The hemorrhage can usually be controlled by pressure applied with a sponge stick with plain gauze or with a pledget wet with one of the preparations of brain extract first suggested by Howell (Kephalin or thromboplastin). This may be preceded by the application of cocaine solution or novocaine with adrenalin when it can be procured, since the pressure is often quite painful. The brain extract, etc., should always be at hand. Frequently the hemorrhage takes place under a clot which piles up in the tonsillar fossa and it can not be stopped until this clot is picked or wiped out. It does little good to apply pressure or hemostatic solutions over these large clots.

Water may be given in a few hours, and food soon after if the water is retained. Cold consomme or cool broth is good for the first feeding four to six hours after the operation. Plain ice cream may be given by the middle of the afternoon. As a rule little food is wanted the first day.

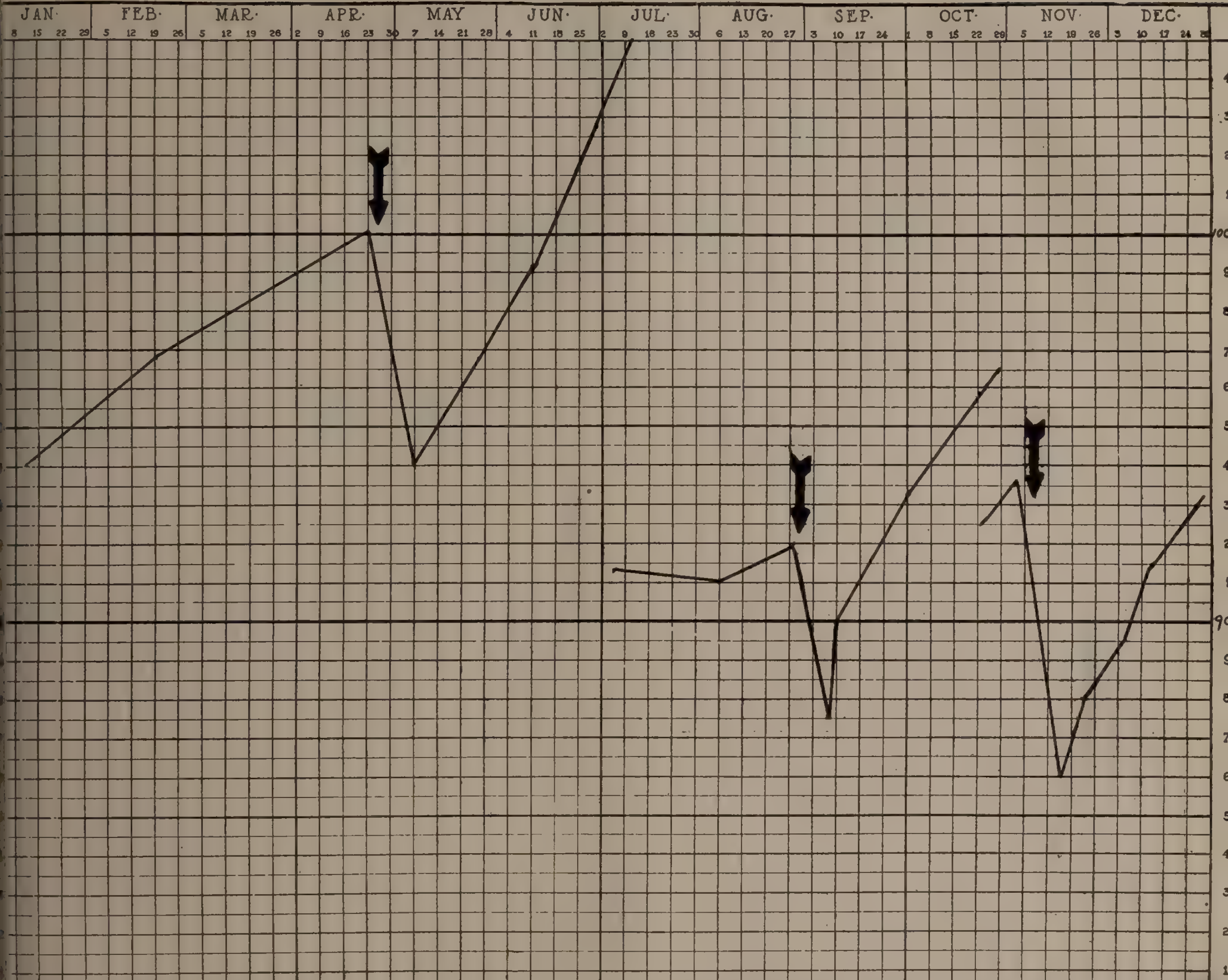
Next morning cereal and milk with soft toast are allowed, and then a rapid increase to the child's regular diet within two or three days.

The most important point to be considered is the length of time for which the child is to be kept in bed. We have seen a considerable change in this respect in the last few years. Formerly nearly all children were sent home a few hours after the operation. It is the rule in practically all hospitals at present to keep the child for twenty-four hours. He is then sent home, usually with no instructions as to after treatment. Three to five days later he is brought staggering into the children's clinic, pale, weak, having lost five or even ten pounds, with a fetid breath, a foul sloughing throat, and frequently with a temperature of 101-103. The mother is sorry that she has consented to the operation, and the physician who induced her to have it done is tempted to regret his share in the affair. I know of no more miserable picture than such a child. He has been up and around, has eaten little or nothing, his bowels may not have moved since the operation, he has had no mouth wash nor treatment of any kind.

In contrast the child who is kept in bed for several days, even for a week, and who receives proper care, does not lose so much because he regains his appetite more quickly, and does not use up his strength by being out of bed before he is back on a full diet. Such children may weigh more at the end of the week's rest than they did before the operation.

The child should be kept in bed for at least

Chart I.



I. Weight curves of three children who were sent home on the day after tonsillectomy. The arrow indicates the day of operation. Note the great loss of weight and the slow recovery.

three days, and better for five to seven, depending somewhat on the amount of general reaction, the soreness of the throat, and the appetite. If the child is eating well, and has little discomfort from the throat he may be allowed up on the fourth to sixth day for an hour or two. The fact that the throat does not completely heal over inside of seven to ten days may well be impressed upon the mother's mind so that she will consider the child as barely convalescent at the end of a week.

With hospital patients who must be sent home at the end of 24 to 36 hours it should be part of an ironclad routine that the mother must be instructed by the resident surgeon to take the child home and keep him in bed for five days. A mouth wash might well be given, and the importance of keeping the bowels open insisted upon. These directions ought to be printed and given out as a routine by the resident or nurse. If left to oral instructions at the time of discharge provided the physician or nurse happens to think of the matter, we all know that few of the children will be properly treated.

It is essential to keep the bowels open. A laxative must be given each night, and an enema each day if necessary. The dose of laxative may be reduced as the diet is increased, and fruits and vegetables given in full amounts.

The value of gargles is questionable, but a

Chart II.

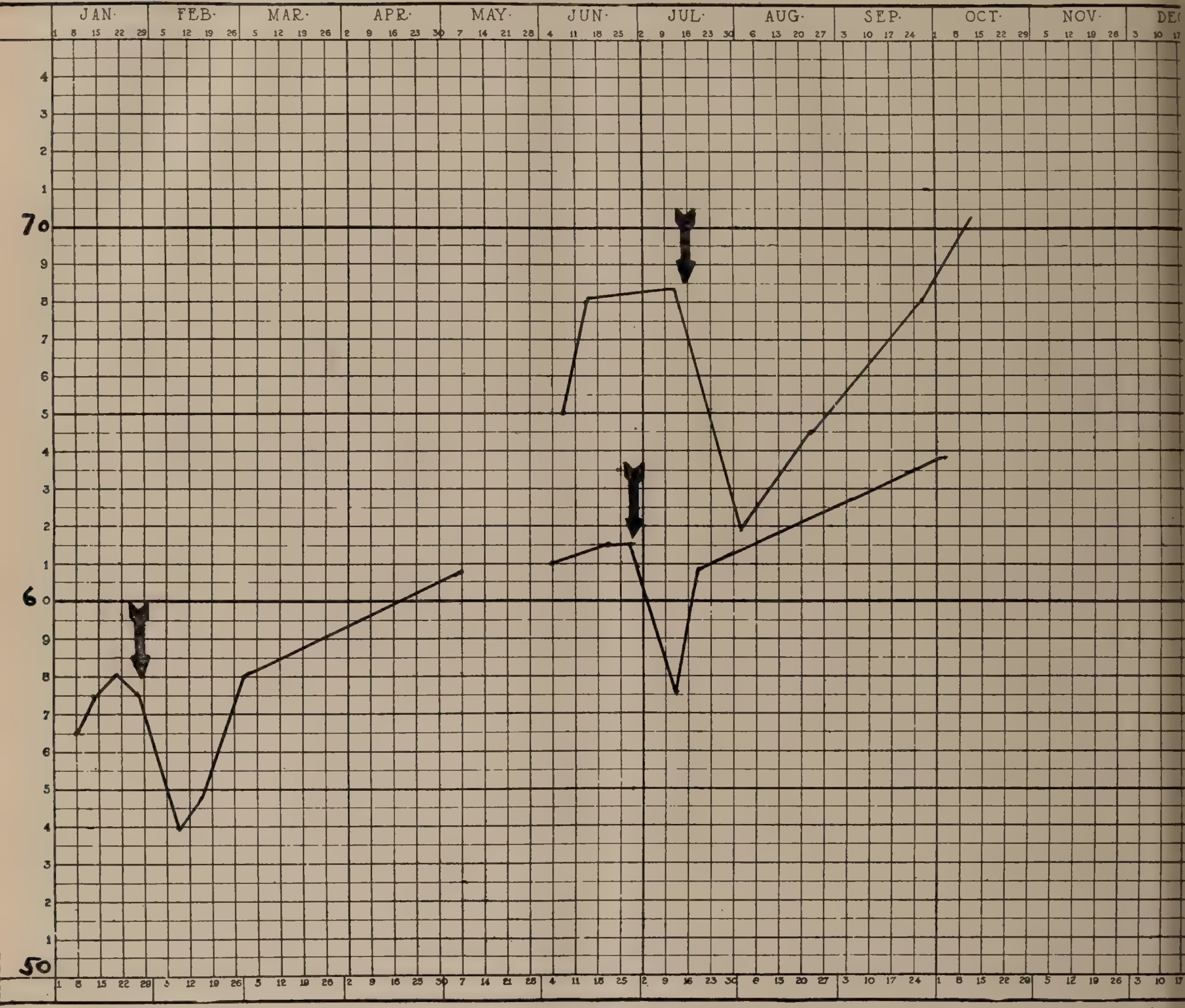
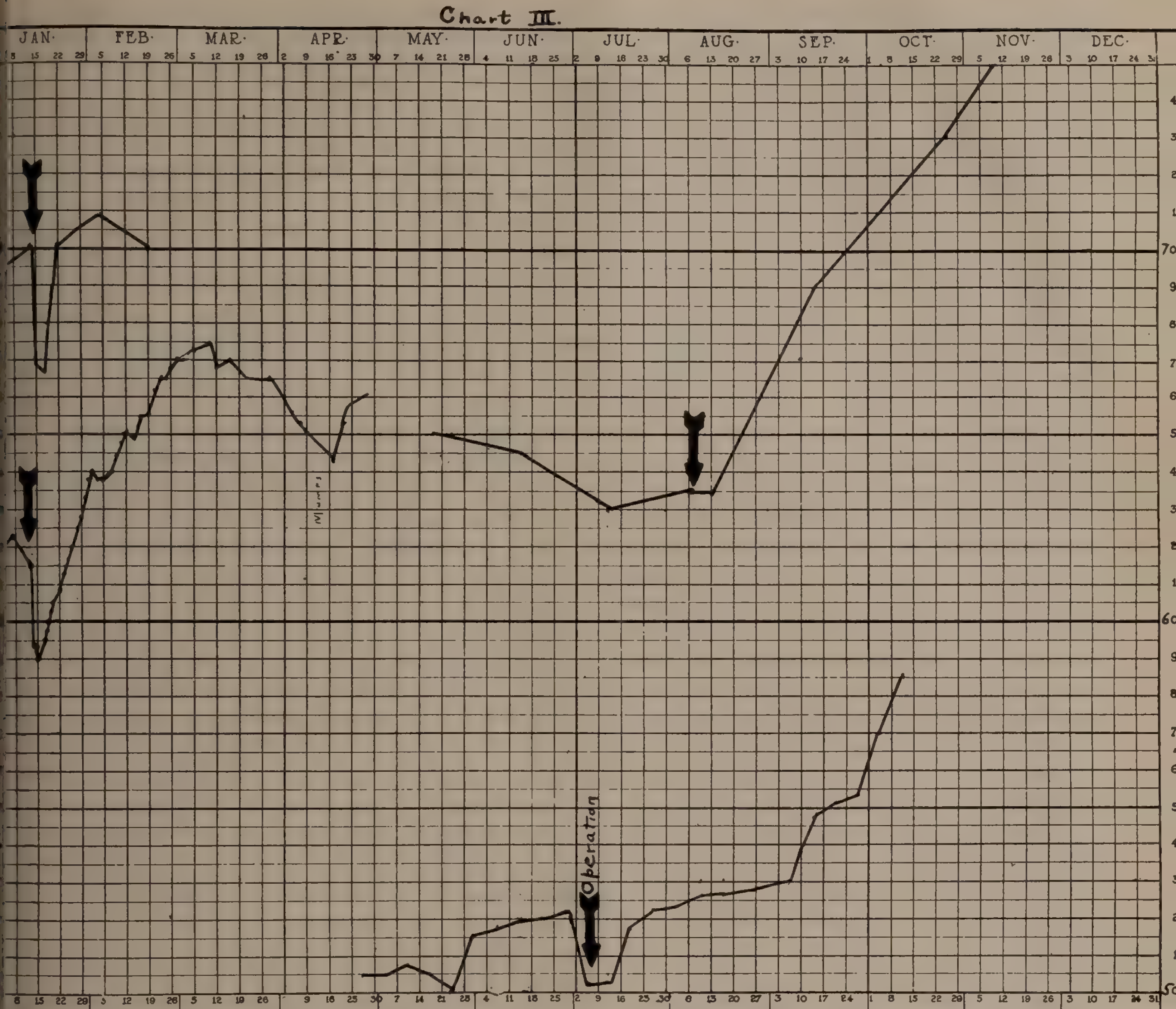


CHART II. Weight curves of three children sent home on day after tonsillectomy. The arrow indicates the day of operation. the great loss of weight and the slow recovery.

mouth wash of any weak cleansing solution certainly does no harm. The mentholated albolene or vaseline may be continued with advantage after the operation. It is dropped into the nose several times a day and helps to keep the nasopharynx clean.

In the nutrition and cardiac classes of the Bellevue Children's Medical Division a considerable number of children who are undernourished or who have heart disease are referred for tonsillectomy each year. It was found very early that the loss of weight following the operation was excessive, when the children were discharged in twenty-four hours. We then adopted the plan of transferring these children from the Throat Wards to the Children's Wards on the day after the operation, since the former had not the room to keep them longer than one night. The results have been much more satisfactory, the loss of weight much less, and the recovery more prompt. This plan is especially valuable in the case of children with heart disease, who may need 10 to 14 days' rest before they are fit for discharge.

The charts I and II show the weight curves of several children who were discharged from a hospital at the end of 24 hours after tonsillectomy. The arrow indicates the day on which the operation was performed. The loss of weight varies from 4 to 7½ pounds, and it took these children from 4 to 10 weeks to recover from the



III. Weight curves of four children who were kept in bed five or six days, and in the hospital one week after operation. Note the small loss and the rapid recovery of the original weight.

loss. These are typical of many of the weight curves on our records.

Chart III shows the curves of children who were kept in bed 6 or 7 days in the hospital or at home. They were carefully fed; the bowels were kept open; and their throats and mouths were kept clean with a mouth wash. In none of these children has the loss of weight been over 3 pounds and the original weight has been recovered in from 6 to 10 days.

Conclusions. Before advising that a child have an operation for enlarged tonsils it is important that his general condition should be taken into consideration as well as his throat. A careful history and examination of the child and of his urine and blood are necessary in order to rule out organic disease. It is desirable to try to improve the nutrition of markedly undernourished children by rest and feeding for a few weeks before operating.

The child should be prepared for tonsillectomy as carefully as for any operation.

After the operation he is entitled to an anodyne, and should be kept in bed for five to seven days, with careful nursing and feeding. Preparations should be made to treat hemorrhage if it occurs.

Under this plan the loss of weight is reduced to a minimum and the original weight is recovered within a few days.

STERILITY.*

By GEORGE M. GELSER, M.D.,
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IN no branch of gynecology has so much advancement been made in recent years as in the diagnosis and treatment of sterility. Until only very recently this subject has been treated along empirical lines which were not only inadequate, but totally erroneous. If a husband was capable of performing the act of copulation and discharging semen, he was considered to be normal and if no offspring were forthcoming, the wife was supposed to have some obstruction in her generative tract or her ovaries to be deficient in ovulation, and the whole blame was placed upon her. She was probably subjected to one or more operations and if no offspring then resulted, she was considered to be deficient in ovulation, and the prognosis for conception considered hopeless. It is to correct this erroneous impression of the medical profession and to emphasize the very hopeful outlook on the question of sterility when treated along painstaking, scientific lines that this paper is presented. For the very great advance in our scientific knowledge of this subject, great credit is due to Edward Reynolds of Boston and for more recent scientific investigation to Lespinasse of Chicago.

To satisfactorily diagnose and treat sterility it must be considered as a problem involving two parties, both husband and wife. Contrary to our former conception it is now considered that the male is at fault in a larger proportion of cases than the female.

There are three definite types of sterility.

(1) Those which are definitely attributable to the male.

(2) Those which are definitely attributable to the female, and a third type where both male and female are normal, but where there is some hemolytic action between the secretions of the two parties so that the union is sterile. This type is shown by several cases on record where the union between the parties has been sterile, where each party has subsequently married and each has had offspring when united with a different mate.

The causes of sterility may be classified under the following heads:

(1) Obstruction in the generative tract of the male.

(2) Obstruction in the generative tract of the female.

(3) Absence of or deficient development of spermatozoa.

(4) Absence of or deficient development of ovum.

(5) Alterations in the female secretions which are inimical to the spermatozoa.

(6) Hemolytic action between the secretions of the male and female which are destructive to the spermatozoa.

Where there is obstruction in the male generative tract, a semen is discharged with absence of spermatozoa. Obstruction in the male generative tract may be due to traumtism or tuberculosis, but in the vast majority of cases it is due to an old gonorrheal infection. Some of these cases it is possible to relieve by various operations as vaso-epididymostomy, either with the vas or epididymus of the same side, or of the opposite side, or a resection of vas and end to end anastamosis either with vas of same side or the opposite side. Also dilation of vas has been done. Obstructions in the urethra should be treated by dilatation or operation.

Obstruction in the female generative tract commonly occurs at the cervix and in the Fallopian tubes. The size, shape, direction of cervix and the situation of the os are of great importance because the extremely common under development of the cervix causes a varying degree of obstruction of uterine secretion, with chronic alteration of the secretion and hindrance to the passage of the spermatozoa. Obstruction in the Fallopian tubes results from infection, most commonly gonorrheal, closing either the fimbriated or uterine end, or from inflammation outside the tubes resulting in closure of fimbriated end. Obstruction in the tubes may be diagnosed by palpation if tube is thickened or distended, by injection of collargol into uterine cavity and demonstration of it's passage through tubes by X-ray, by evidences of pelvic inflammation and adhesions, by laparatomy and catheterization of the tubes, or by inference on recovering motile spermatozoa from uterine cavity several hours after intercourse, showing there must be either an obstruction in the tubes or deficient ovulation.

Absence of or deficient development of spermatozoa.—Spermatogenesis is probably influenced by the anterior lobe of pituitary and suprarenal glands and absence of spermatogenesis has been helped by the administration of large doses of anterior lobe of pituitary and suprarenal gland extracts daily. Spermatogenesis is also inhibited by the X-ray, by weakened and debilitated conditions, by excessive alcohol and tobacco, and by environment. These conditions should be investigated and treated by regulation of mode of life, diet, hygiene, *etc*. Thyroid gland extract has also been used to further sexual development.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 21, 1918.

The deficient development of spermatozoa is shown by the degree and character of their motility. The fertility of the male can be quite accurately estimated by studying the numerical frequency of the spermatozoa and the degree of their vitality by duration observations and the quality of motility. Where only a few motile spermatozoa are found, the probability of impregation is small. In normal cases, examination of vaginal pool shortly after intercourse shows an uncountable number, from the cervix only 20 to 30 are found in a field, and from the uterine fundus, only one in several slides is a fairly large number. Reynolds has described three types of motility: a progressive, vibratile motion of whole spermatozoa which is very rapid, an undulatory tactile or waving motion of the tail from side to side which is very slow, is a later stage in the journey of the spermatozoa and enables it to pass in and out and around obstructions, and, third, a bunting or burrowing motion which enables it to force an entrance into the ovum. Only the most vigorous type attain this later stage, and it has been observed only in the presence of the female secretions. Normal semen kept at body temperature at end of 1-2 hours shows nearly all spermatozoa actively motile, some are still motile at 6 to 8 hours. Lespinasse estimates the vitality of spermatozoa by their rate of motion, normal spermatozoa cross the field of a 1/6′ lens in 6 to 8 seconds, some require 30 to 40 seconds. The motility varies from normal to no motion at all.

Experiments by Cole are quite significant. A female rabbit was bred to an alcoholized male and then to a normal male, different breeds being used so the young could be identified. All the young were from the normal male. Again when an alcoholized male was used, impregnation occurred, indicating that alcohol inhibited the motility of spermatozoa so that the non-alcoholic spermatozoa reached the ovum first.

Absence of or deficient development of ovum. Alterations in the ovary, producing infertility, are due: (1) To deficient development, (2) to the presence of numerous small or medium sized retention cysts accompanied by thickening of the capsule, (3) or to the presence of a persistent corpus luteum. These alterations in ovaries are usually accompanied by alterations in the lower genital tract. Excessive obesity and mental overwork also inhibit ovulation. The secretions of the woman act as the medium or host for the spermatozoa and ovum to live in until their union. Alterations in secretions may be due either to gross pathological lesions or to minor physiological derangements which render the secretions hostile and cause the destruction of the spermatozoa. Next to the absence of the male element, the most common cause of sterility is alteration of some of the female secretions, and only by careful, painstaking study of the female secretions can we determine the etiological factor and necessary treatment of each case of sterility. These alterations may originate in the vagina, cervix, uterine or Fallopian tubes, and any alteration in secretion from a higher point, necessarily alter the secretion in those of the lower areas over which they drain.

The secretion of the vagina is normally acid and is destructive to spermatozoa when unprotected in one or two hours. The semen has a coagulating property, however, and as coagulation takes place, the spermatozoa inside the coagulum are protected from the acid vaginal secretion and their existence prolonged. When vaginal secretion is excessively acid or the vitality of spermatozoa is weak, the destruction takes place more rapidly and relatively few actively motile spermatozoa survive to reach the cervical canal. During intercourse the semen is deposited around the mouth of the cervix where it forms as a cup-shaped coagulum, is thereby protected from the hostile vaginal secretion, and the spermatozoa then travel easily into the cervical canal. Immediately after intercourse a few spermatozoa are found in the lower cervical canal, but one hour later a much larger number are present and actively motile.

The normal cervical secretion is alkaline, clear, translucent, about the consistency of the white of egg and small in amount. This secretion is altered both in character and amount, due to cervical stenosis, lacerations, diseased discharge from the uterine cavity or Fallopian tubes, but most frequently from diseased condition of cervical mucous membrane as a result of infection, most commonly gonorrheal. Secretion then becomes excessive in amount, cloudy, turbid and of a mucopurulent or seropurulent character. Infection in the cervix may be acute or subacute, but is usually a chronic condition with infection deep in cervical glands and is very obstinate to treatment.

Secretion in uterine cavity is normally small in amount, thin and serous and not hostile to spermatozoa. When cervical stenosis or obstruction is present, however, secretion is altered because of lack of drainage and becomes thickened, cloudy, mucopurulent or seropurulent. The same secretion may be present in uterine cavity from drainage into it from infected tubes. One tube may be normal, but if the other is infected, the discharge from this drains over the whole tract below it, alters all the secretions and causes sterility. This may be relieved by removing the one diseased tube. The Fallopian tubes are the common site of infection, usually gonorrheal, and here take place the most marked changes. We know very little about the normal secretion from the tubes, but when infected, the inflammation closes the fimbriated end, and at times the uterine, the tube becomes thickened and distended with serum or pus and pronounced permanent changes result. They may become the seat of chronic purulent discharge and frequently become permanently closed. When both tubes are the seat of chronic purulent secretion, there is very little hope for impregnation. When secretion has become normal and the fimbriated end alone is closed, occasionally relief may be obtained by plastic operations on the tubes.

To satisfactorily diagnose and treat each individual case, it is essential to first obtain a complete history of the sterility and the sexual habits of the couple. Then the complete history of the past health of both parties, both general and genital, and also their general habits, hygiene and mode of life. Next a thorough examination of the woman, under anesthesia if necessary, should be made to detect any gross pathological lesions. The next step should be an examination according to a method recently brought out by Max Huhner of New York in which a miscroscopical examination is made of the spermatozoa in the secretions of the woman during the passage through the generative tract, whereby accurate information is given of the vitality of the spermatozoa in the several secretions of the woman. The examination is made as soon as possible after intercourse, preferably within one-half hour, though normally the spermatozoa are actively motile in the vagina for one hour. A specimen is taken with a platinum loop from the cul-de-sax of the vagina and examined under the microscope. If no spermatozoa are present, the case is one of aspermia, and another examination should be made of the semen itself using semen collected in a condom at intercourse and kept at body temperature. If only few motile spermatozoa, or spermatozoa with feeble motility are found in the vaginal secretion, the vaginal secretion is shown to be abnormally destructive to the spermatozoa. A specimen is next taken from the cervical canal, after first gently wiping the semen and vaginal secretions from the surface of the os. Immediately after intercourse a few spermatozoa are found in the lower cervical canal, but one hour later a much larger number are present and actively motile. If, however, a chronic cervicitis is present, with thick, turbid, mucopurulent or seropurulent discharge, the spermatozoa become enmeshed in the stringy mucous or purulent secretion, lash about in trying to escape and soon become exhausted and die. If then at the end of one or two hours, numerous actively motile spermatozoa are found in cervical canal, it demonstrates spermatozoa of strong vitality and vaginal and cervical secretions which are not destructive.

If uterine cavity contains spermatozoa, which are killed in a short time, the indication is that they are killed by hostile secretions from the Fallopian tubes. If a large number of actively motile spermatozoa are present in the uterine cavity for a long time, the indication is that ovulation is deficient or that Fallopian tubes are not patent.

When spermatozoa are rapidly destroyed in the vagina, the male and female secretions should be tested for hemolytic reaction by mixing some of the fresh semen on a slide with some of the blood serum of the woman, if hemolytic reaction takes place the spermatozoa will be destroyed in a few minutes.

After this painstaking examination the diagnosis should be readily made of the etiological factor at fault in each case and the prognosis and treatment established.

Edward Reynolds has summarized the prognosis as follows:

If few spermatozoa or spermatozoa of feeble motility are present, the condition is due to the male, and the prognosis is that of the condition of the male. If active and abundant spermatozoa are present the sterility is attributable to the female, and the prognosis is as follows: When the abnormality is vaginal or cervical secretion, or a small or badly placed os, prognosis is very good under treatment. When abnormality is apparent from the uterine body with secretion mucous and with abundant leucocytes, but with tubes and ovaries normal, the prognosis is good. When both tubes are grossly diseased, the prognosis is poor; if one tube is diseased and the other normal, the prognosis is good after removal of the diseased tube. When disease is apparently ovarian, due to retention cysts, if not badly diseased, the prognosis may be good by conservative operation. When there is under development of the ovaries, the prognosis is poor.

Having established the ethiological factor the treatment is readily determined. When the sterility is attributable to the male, the treatment should be followed as already indicated, operation for obstruction cases, glandular therapy for deficient spermatogenesis, regulation of mode of life, habits, environment, improvement of general body health and hygiene.

Hyperacidity of the vaginal secretion may be treated by alkaline douches, alkalies by mouth to overcome a condition of systemic acidosis, depletion to relieve pelvic congestion, etc.

Cervical obstruction may be treated by dilatation, plastic operation or more easily by direct uterine insemination. Cervical infection with alteration of cervical secretion should be treated by repeated disinfection, cauterization, plastic operation removing the diseased cervical mucou membrane or by direct uterine insemination.

In either of the foregoing instances, where spermatozoa are weak, vaginal or cervical secretions hostile, or cervical canal obstructed, direct uterine insemination gives promise of being the most efficient procedure. When spermatozoa are weak or secretions destructive, the likelihood of spermatozoa reaching the uterine cavity is very small, and by directly introducing semen into uterine cavity, the long distance for the spermatozoa to travel and the destructive secretions are avoided. The semen is thereby introduced in its most active state in close proximity to the mouths of the Fallopian tubes and if the tubes and ovaries are normal, the likelihood of impregnation is very much increased. This procedure should be done either a few days before menstruation or directly following. The technique is as follows: The semen should be collected in as sterile a condition as possible. The husband should be instructed to carefully wash the penis with soap and water, boil the condom and apply it without contamination, then following intercourse the end of the condom should be tied and placed in a jar with warm water to maintain the semen at body temperature. The couple then call at the office as soon as possible, the woman is placed in Simms' position, vagina and cervix carefully wiped clean and a small catheter or special type syringe introduced into the uterus about one and three-quarters or two inches. A small amount of semen about three to five minims is then injected, woman is kept lying down for 15 or 20 minutes and then allowed to go home. If a large amount is injected, colic will be produced.

When abnormality is definitely found in the uterine cavity it may be advisable to gently curette the uterus but this should never be done without positive indication and frequently does much harm.

Occasionally plastic operations on the Fallopian tubes and on grossly diseased ovaries are beneficial, but these should never be done until all other etiological factors have been eliminated.

Where ovarian or uterine under development is present, glandular therapy gives some hope of success. The extracts of anterior lobe of pituitary and of suprenal gland are occasionally beneficial. Ovarian extract and extract of corpus luteum I have used quite extensively in cases of under development with very little success. Thyroid extract occasionally helps sexual development, especially in the very obese.

In conclusion, I wish to emphasize:

Sterility is more frequently attributable to male than to the female.

The necessity for painstaking examination of both the gross and minor alterations in the female generative tract.

The value of direct uterine insemination.

Glandular therapy for cases with weak spermatozoa or female under development.

MOTHERHOOD.*

By **RALPH WALDO LOBENSTINE, M.D.**,

NEW YORK CITY.

SIR JAMES CRIGHTON-BROWNE addressing the National Health Society in London regarding the welfare of the nation spoke in these words:

"We shall win this war—that is certain—if there is a God in Heaven, and if our British hearts be true. We shall break down and crush forever the most infamous system of brutality that has ever defiled the world. The point is that when we achieve victory, shall we reap the fruits of those men's sacrifices that they are making? Shall we fill up the gaps in our ranks? Shall we hold our own in the new world that will emerge after the war is over? In order to maintain our new position it is of paramount importance—paramount, I say that we should look to 'motherhood' and to the welfare of the new-born."

Too long has the expectant mother been neglected; too long has "the leave it to nature" delusion occupied our minds. Never before have nations been brought to such a keen realization of the value of the mother. With the frightful losses at the front and with the inevitable injuries to women wrought by the strenuous industrial efforts of war, "conservation of life," next to winning the war itself, stands out "pre-eminent" in its importance.

In the report of this year, of the Children's Bureau in Washington on the "Care of Babies and Mothers" in rural districts, certain features of great importance are clearly brought home to us. A study was made in one county in Kansas where the level of prosperity was high, where no home was more than twenty-five miles from a doctor and where telephones were abundant and roads good. Despite such reasonably favorable conditions for a rural community, it was found that two-thirds of the mothers had no medical care before the children were born, more than one-third had no visit from a physician after the child was born and four-fifths of the women had to work for large farm crews until very near the time of confinement. In many parts of this country, conditions are even worse than in this county in which the study was made. The problem of the city is easier, on the one hand, because distances are less great (than in the country), thus affording greater accessibility to doctors, to nurses and to hospitals; yet on the other hand, it is more complex, because of the overcrowding, the frightful poverty and the great mixture of races.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 22, 1918.

Year by year, those interested in the well-being of the child are recognizing in an ever-increasing degree this fact; namely, that life begins nine months before birth and that congenital influences, together with injuries and accidents at birth, are of far-reaching importance.

Approximately, 40 per cent of all deaths under one year of age are due to congenital diseases; 37 per cent of all deaths under one year of age occur during the first month of life, while 75 to 80 per cent of these are due to congenital diseases.

"During the thirty-year period from 1884 to 1914, the death rates from diarrheal, respiratory, and contagious diseases have been markedly reduced—approximately, 75 per cent, 53 per cent and 88 per cent, respectively—while the death rate from congenital diseases has been reduced only 1.5 per cent. The death rate during the first month of life has remained practically unchanged for many years, while the total infant mortality rate and the rate from the second to the twelfth month of life have progressively declined."—Jacob Sobel, New York Board of Health.

To this loss must be added a high still-birth rate and the many thousands of miscarriages concerning which there are no reliable records and yet which, when spontaneous, are more or less dependent upon the same causative factors as are to be found in the cases dying after birth.

The mortality risk to the mother may be appreciated from the statement of the Children's Bureau "that in this country more women die during the child-bearing age from the effects of parturition, than from any other cause except tuberculosis."

These figures are of the highest importance, you will agree, because they very strikingly reveal the fact that the nine months of intrauterine life, coupled with first month after birth, represent the high mark of danger in the life span of every individual, and that parturition still possesses for the mother many dangers—some of which are preventable, while others, alas, do not seem to be so.

No preventive work is more urgent than this or more satisfactory, perhaps. With careful prenatal and natal supervision there will result a reduction of from 35 to 40 per cent in deaths under one month of age; a material lowering in the number of still-births, a reduction in premature births of at least 25 per cent, and a maternal death rate of from 65 to 75 per cent below the general rate of unsupervised cases.

The only way improvement can and must be brought about is through efficient oversight of the expectant mother, both during pregnancy and labor. Could prenatal care accomplish nothing more than to diminish the large number of still-births and premature births, it would yet be accomplishing enormous good.

We are fighting industrialism with all its attendant horrors—poverty, filth, ignorance of the fundamentals of health; rum and tuberculosis. These are the hostile forces that are ever busy, ever eager to accomplish the physical and moral undoing of the community. Expectant mothers and young children fall ready prey to their attacks. Of these evils, the three basic ones are: First, ignorance; second, rum, and third, ruthless industrialism. Remove the curse of alcohol and the others, poverty, filth, ignorance, syphilis and tuberculosis will, in a large measure, disappear.

Alcohol is in itself, in addition to its baneful social aspect, a direct danger to the expectant mother and a curse to the offspring. The ravages of syphilis and tuberculosis are well known and call for most energetic control.

It is not strange, then, that with the many difficulties surrounding the poor parturient, the toll in health and in life itself of both mother and child during pregnancy and confinement should be great.

These, then, are the problems we must face in order to help the expectant mother and assist her in producing healthy offspring. Their solution, in both country and city, depends upon the arousing of community interest and education in the vital facts of child conservation. In the presence of a known abnormality or of sudden complication, the rural practitioner or midwife is handicapped by distance, by lack of nurses, lack of hospital facilities and above all by the difficulty of securing adequate consultation. The situation would, in the writer's opinion, be at least partially solved through the "county hospital plan" (first advocated by him in the fall of 1915). These hospitals should be of moderate size and should be thoroughly equipped. Each hospital should act as the health centre of the community and through it the education of the community in health problems could be carried on.

In New York City the situation is being studied from several different angles. Our efforts, up to the present time, have been confined to the Borough of Manhattan with its two and one-half million population and with its sixty to sixty-five thousand births per annum.

The first step in the simplification and coordination of the work for expectant mothers was the development of a zoning system (as outlined in the *Journal of Obstetrics*, September 1917). For this purpose the Borough of Manhattan was divided into ten zones. The basis adopted was the ratio of existing maternity facilities to the number of births in the different sections of the Borough.

The district plan is important for hospitals, lay organizations and most of all for the patients themselves. It marks a great step forward in efficiency; it encourages the hospitals to draw their clientele from their particular district rather than from great distances; it renders prenatal oversight of the expectant mother far easier by economizing the time of both patient and visiting nurse. Having districted the Borough, the second step was to establish a maternity center in each zone.

THE MATERNITY CENTER

will be the center of an educational campaign for prenatal care of mothers of the district. The fathers, too, need education and will not be neglected. It will be the coördinating agency or clearing house for the expectant mothers in the zone.

It will keep records of every case coming under the care of clinics in the neighborhood and follow up each case so that no woman who registers shall be allowed to slip out from under medical care by reason of illness, carelessness or other causes. Nurses and social workers will be used as follow-up visitors and to keep in touch with each expectant mother in the district. How important this is may be realized from the studies of the Bureau of Child Hygiene, which have disclosed the fact that from 35 to 40 per cent of the population of child-bearing age of a given section remove during the year, and that some of these families remove as frequently as three or four times during the year.

It will promote and extend the work of every agency working in the zone and engaged in the problems of maternity and child welfare.

It will secure the opening of new prenatal clinics conveniently located when not enough such clinics exist to serve the needs of the district. The district doctors and midwives will be urged to bring their cases to these clinics for consultation.

A STEP FORWARD.

It will be open day and night for emergency calls and will see that a doctor or midwife is supplied for all cases of labor and a nurse for abnormal labors. In those districts in which there is no hospital with an outdoor obstetric service, the problem of supplying the patients with even fair medical attendants, either doctor or midwife, is a difficult one. The midwife situation in New York City is greatly improved, but the medical aspect is less satisfactory. In the new prenatal clinics that are being developed by the Maternity Center Association, we are endeavoring to provide women physicians as far as possible in order, through these clinics, to reach the large class of foreigners who go to the midwife because of prejudice towards the male physician. These prejudices may be disregarded but they can only be slowly and cautiously broken down.

It will follow up each birth and see that nursing care is provided throughout the danger period. By coöperation with every social agency in the neighborhood and by house to house visiting, by nurses and social workers, practically every expectant mother in a given zone will, in time, be informed of the need for prenatal care.

It will secure through other agencies relief and assistance for mothers belonging to families where poverty is clearly a menace to the health of mother and infant, and through coöperation with other agencies it will secure the necessary household assistance for the mother at the time of her confinement.

All the clinics are to be standardized so far as records, nursing care and medical oversight, and an effort will be made to encourage all abnormal cases to go to the hospitals for supervision and delivery.

Standards of prenatal requirements for both hospitals and maternity center clinics have been formulated by the Maternity Service Association of physicians. These requirements are:

1. Patients should be urged to register at a clinic early in pregnancy. This is of great importance in order to obtain prenatal care at an early date, and that the physician may determine the presence or absence of abnormalities. Strange as it may seem, two of our leading obstetrical hospitals have until recently been unwilling to examine applicants, until in the fifth or seventh month of pregnancy, respectively.

2. At the first visit patient should be given printed instructions for her general guidance during pregnancy.

3. Patients should be urged to return every four weeks (every two weeks for Maternity Center patients) up to the end of the sixth month, and every two weeks thereafter (for Maternity Center patients every ten days up to the eighth months and every week thereafter). If they do not do so, a postal should be sent, and if there is no answer within two days, they should be followed up in the home by nurse or social worker. In case the patient's condition is not entirely satisfactory at the time of any one visit, and in case she does not return on an appointed day, the visit to the home should be made at once. These home visits are of particular value in obtaining the confidence and interest of the patient. It enables the visitor to familiarize herself with the particular social and economic difficulties of each family under her care and afford an opportunity of teaching the fundamentals of personal hygiene.

4. The patient should bring a specimen of the urine at each visit.

5. The medical examination shall include:
    - (a) Thorough physical examination.
    - (b) Urine examination every four weeks up to six months, then every two weeks thereafter (Maternity Center cases every week during the last month).
    - (c) A blood-pressure estimation at each visit.
    - (d) A Wassermann test in every suspicious case (this can be carried out through the Board of Health).

Synopsis of Instructions to Expectant Mothers.

Consult your physician or attend regularly a maternity clinic every two weeks. Do not worry and do not discuss your condition with your friends.

Do not fail to have the bowels move thoroughly each day. For constipation, consult your doctor, midwife or maternity center nurse.

Drink at least six glasses of water daily.

Avoid alcohol in any form. Alcohol upsets the kidneys and liver.

Drink sparingly of tea and coffee.

Drink each day, if well, cocoa, fresh milk or malted milk.

Eat plenty of all kinds of vegetables and some fruit daily, especially cooked fruit.

Do not eat meat or eggs more than once a day and avoid strong meat soups. Eat no beef during the last four to six weeks.

Sleep with windows open.

Take a walk daily, when possible.

Take a warm tub bath at night, if possible, or a sponge bath.

Try to take some rest each day.

Marital relations should not be indulged in too frequently and should be absolutely avoided during the last six weeks, and at the time of periods.

Notify your physician or the clinic if suffering from severe headache, vomiting, dizziness, swelling of face, feet or hands, abdominal pains, or from any bleeding whatsoever.

Labor pains begin with pain in either back or abdomen, with bleeding or watery discharge.

"In this time of war we must set our faces resolutely against everything that on any pretext seeks to break down those barriers we have set up through years of patient labor against the enervation and dissipation of child-life and woman-life in this country. It will do us no good to send our sons to France to fight for our political rights if while they are fighting for us there, we destroy or surrender the precious privileges of womanhood and childhood here."—Newton D. Baker.

THE CARE OF THE PREMATURE CHILD IN THE HOMES.*

By HERMAN SCHWARZ, M.D.,

NEW YORK CITY.

I SHALL try to make this extremely practical and give you only a résume of the procedures, and reasons therefore, which we pursue in our work, especially in the poor homes of our clientele at the John E. Berwind Free Maternity Clinic in New York City.

We direct our attention particularly to

1. The temperature of the child.
2. The temperature of the room.
3. The nourishment.
4. The respiration.
5. The weight.
6. Nursing care.
7. Prognosis.

The temperature of the premature child at birth is lowered and less than that of the full-term child. As is well known there is monothermia in the normal newborn. Variation of less than three-tenths of a degree in the 24 hours is the rule, whereas in the premature sub-normal temperature with large fluctuations, usually downward, are common. This is due first to the greater body surface as compared to the weight of the child; second, to a greatly diminished or almost absent paniculus adiposis; third, to the diminished amount of food that the premature can take and assimilate, and fourth, to incomplete development of the nervous system, especially of the heat center.

In order to combat these circumstances we try to keep the heat within the child's body by various methods. The premature often arrives unexpectedly so that nothing is ready. It is a mistake to permit the child to remain lightly folded in some blanket, especially in the winter time. It should be thoroughly rolled up, head included, and surrounded with hot bottles, or if the mother is in bad shape it may be put in a warm bath (temperature 100-102) and held there. Budin showed so well that the initial reduction to a very low temperature is most injurious to the child. When the excitement with the mother is over, the child should be thoroughly cleaned by means of a warm bath, for leaving the child in its vernix and covered with cotton produces a fine mess and is an excellent means of infecting it.

We are not in favor of wrapping the child in cotton, for it has seemed to us that unless these jackets are accurately made they do not approximate the body and hence do not prevent radiation. It has seemed warmer to us to use a leg cut from an adult suit of woolen underclothing, which does for the child's body, with only the head and arms sticking out. With blankets over it this has seemed sufficient, and enables the nurse to get at the child more easily. The ordinary clothes of the newborn may also be used. At times we have made a suit of oil silk to cover the whole, and in some instances have thought that the heat is kept in better. The child is placed in an ordinary basket, hot-water bottles kept around it, and put into a room with a temperature of 77° F.—certainly not greater than 80° F. In summer this is usually the temperature outdoors, but in winter it must be produced artificially. It has not appeared to us to have made much difference just how this was accomplished. Anything from an oil stove to an electric stove may be used. A large room thus heated, and one adult and baby in it, will surely retain enough oxygen to do for the gaseous interchange in the baby's metabolism. Please do not let us be quoted as saying that when possible the magnificent arrangement in some of the infant hospitals is not to be preferred, but warmth—to get a temperature of 77° F.—is the important thing. Double-lined bath tubs, electric incubators, and other contrivances have seemed unnecessary. If the baby's temperature does not stay up to 97° F., with the room temperature 80° F., then the sub-normal temperature is due to other causes, as insufficient food, or congenital defects.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 22, 1918.

Nourishment.

This can be discussed under the following headings:

1. What to give.
2. How much to give.
3. How often to give.
4. How to give it.

The ferments being present in the intestinal tract of the premature, just as they are in the full-term child, there seems no justification in giving predigested foods, or for diluting breast milk. This latter seemed to us a great fallacy, for in truth it is often hard enough to give sufficient amount of nourishment in the twenty-four hours without increasing the bulk.

Breast milk is the only food for the premature, especially during the first few weeks of life, and it is the duty of the physician to scour the neighborhood and induce each neighbor to give a few ounces to make up the amount. We have been fortunate in being able always to get a sufficient amount of breast milk from our clinic.

The amount of breast milk a premature needs is difficult to state absolutely. The caloric requirements are surely higher than in the full-term child. Men differ, placing it anywhere from 100 to 160 cal. pro kilo weight. This is because the body surface is relatively greater than the normal newborn, and, as stated before, the paniculus is less. Yet the difference in the caloric requirement is more apparent than real—for no one will deny that a kilo of a nice fatty, juicy, full-term, newborn is an entirely different thing than the kilo of dry skin, muscle and bones of the premature. However, it may safely be said that after the first week one must give at least 8 ounces of breast milk in the twenty-four hours; usually 10 to 12 ounces in order to make them gain. One-sixth to one-seventh of the body weight in ounces of breast milk is a safe rule, which must be controlled by daily weighing. It is important to begin feeding the premature surely within twelve hours after birth, or at least give them water so that as little physiological loss as possible takes place. Twenty to fifty grams, about one ounce, the first day, increasing by an ounce or more each day or so that the quantity to cover the caloric requirements, or more, practically stated to make them hold their weight or gain, is given as soon as possible.

If breast milk cannot be obtained I use a dilution of whole milk one to four, with milk sugar (a mixture low in fat and high in carbohydrate, up to seven per cent sugar), or more often an evaporated milk mixture, in which one ounce of the evaporated milk is equal to about two ounces of ordinary milk. At the end of the first week about five to seven ounces of cow's milk with one ounce of milk sugar in the twenty-four hours, usually covers the caloric requirement.

As to how much the premature should gain, that is an open question, for there is some danger, although not much, of overfeeding. Ordinary observation of the number and kind of stools, and of the vomiting, will usually control this contingency. It must not be forgotten that the premature should really be in utero where its growth impulse, if I might use this expression, is greater than that of the normal newborn, so that this physiological loss should be obviated and a gain in weight if possible begin within a few days after birth.

How Often Should the Premature Be Fed?

This cannot be answered dogmatically. I tell my nurses how much to give in twenty-four hours, and the less frequent the feedings, even as great an interval as every four hours, the better. However, as much as we have tried to give only five to six feedings in twenty-four hours—as seems to have been so successfully done by many of my friends in the west—we have usually failed, and have had to give every two or three hours, or even every hour. It depends upon the baby's suckling power, its capacity, and so forth. Here is where the careful nurse or attendant comes in, who soon gets to know the particular infant, how it will take the most without regurgitating, or getting attacks of cyanosis.

HOW TO GIVE THE FEEDINGS.

This is often a problem. Where the suckling power is strong they may be put to the breast, but where one is in doubt it is better to give the breast milk with the bottle. This may be done with an ordinary bottle, or by means of a Broeck feeder, which is nothing more than a pipette with a small nipple at one end and a bulb at the other, which is gently squeezed so that the milk is forced down the child's throat. It must be done very carefully so that the food is not forced into the larynx. When this is not successful, a pipette with a piece of rubber tubing attached to its sharp end, may be used. When, however, the child has neither power to suckle nor yet to swallow, then one must use the catheter, as a stomach tube. This may be done six or seven times in the twenty-four hours, if need be, but one should never forget to try at each feeding one of the foregoing methods. One can never tell when the child will begin suckling or swallowing. Often one day of tube feeding will be sufficient.

The respiration in the premature is usually very superficial and irregular. Atelectasis is always present. Oxygenation is incomplete. CO_2 accumulates in the blood, and children have attacks of cyanosis. This, if repeated frequently over many days, is usually a bad symptom. The attacks may be due to aspiration of food, or also, according to Budin, to insufficient food. Another factor which may produce these attacks of cyanosis is that during feeding respiration is further embarrassed owing to the act of suckling. The infants must be made to cry at stated intervals. Caffein and camphor administered hypodermically, and oxygen during the attacks, may be of help.

Over and above all a good conservative woman, especially one with experience, who has a pride in taking care of these cases which are very hard, and who is always on the job, is the most important factor in insuring success.

In conclusion, it must not be forgotten in sizing up the prognosis in a premature infant that

1. A child may be full term, yet really not ripe or fully developed.
2. In addition to being premature it may be congenitally weak, with the inability to perform the normal functions of life.
3. That it may have congenital deformities which further impair its chance to live.
4. That the period of rapid development in the last months of uterine life which these children lose, has to be allowed for by proper and sufficient nourishment, and
5. It must be realized that these babies miss the great deposit of mineral salts, especially iron and calcium, which occur in the last months of pregnancy, and thus regularly become anaemic and rachitic. We therefore, in addition, often give our prematures iron after the fourth week of life, and cod liver oil a little later. Additional food, as vegetable extracts and broths, is given earlier than in the normal infant—usually at six months.

The immediate prognosis depends upon

1. The degree of somnolence—the child's cry, etc.
2. The frequency and duration of the period of cyanotic attacks.
3. The ability to suckle or swallow.
4. The ability to keep the temperature fairly normal.
5. The ability to gain weight.

We append the weight and nourishment chart of one of our cases for forty-one days of its life:

	Weight		*Total Amount of Breast Milk in 24 Hours*	
Age	*Lb.*	*Oz.*	*C. C.*	*Defections*
1 day	3	4	96	5
2 days	3	2	125	4–5
3 “	3	2	151	4
4 “	3	2	155	5
5 “	3	1	130	5–6
6 “	3	1	144	4
7 “	3	2½	158	4
8 “	4	4	170	3–4
9 “	3	4	170	3
10 “	3	4	172	4
11 “	3	4	182	3–4
12 “	3	5	195	3–4
13 “	3	5	210	3–4
14 “	3	4	248	3
15 “	3	5	365	4
16 “	3	6	355	4
17 “	3	6	355	3
18 “	3	6	355	4
19 “	3	6½	395	3
20 “	3	6½	363	3
21 “	3	9	340	3
22 “	3	9½	428	3
23 “	3	9½	420	3–4
24 “	3	12	383	3
25 “	3	13	428	3
26 “	3	13½	428	4
27 “	3	13½	392	4
28 “	3	15	392	3
29 “	4	1	392	3
30 “	4	1½	392	2
31 “	4	2½	392	3
32 “	4	3	392	3
33 “	4	5	392	3–4
34 “	4	5	392	3
35 “	4	6	392	3
36 “	4	7	392	3
37 “	4	8	392	3
38 “	4	10	392	2–3
39 “	4	11	400	3
40 “	4	13	388	2–3
41 “	4	13		

THE LONGITUDINAL SINUS — ITS ADAPTABILITY IN PROCURING BLOOD FOR DIAGNOSIS—ITS USE IN TRANSFUSION OF BLOOD, AND FOR DIAGNOSTIC PURPOSES—AN IDEAL METHOD IN INFANCY.*

By LOUIS FISCHER, M.D.,
NEW YORK CITY.

WHEN we consider the difficulty encountered in trying to enter a vein the size of the medium basilic or even the femoral in infancy, and compare the ease with which we enter the sinus located at the posterior aspect of the anterior fontanel, our choice will readily fall in favor of the sinus route. The method is so simple that even an inexperienced operator need not hesitate to try it.

By the use of the longitudinal sinus we have a direct channel through which a small or large quantity of blood can rapidly be taken from, or added to, the circulation. Since time counts for a great deal in depleted and marasmic infants, the simpler the route, the more advantageous to the infant.

There are many obscure lesions in infancy; such as congenital syphilis, which demand exclusion before a positive diagnosis can be made. To obtain sufficient blood for a Wassermann test, if our former methods of aspirating blood from a vein are used, is a difficult problem. Any one who has tried the elbow, thigh, or even the jugular vein for intravenous transfusion will recall the difficulty encountered in getting into the vein, and the time lost by this complicated method. Scarification of the skin, followed by suction with a Bier cup, is also a slow and painful method commonly used.

Marfan in 1898 first suggested the use of an intravenous saline solution. He advised injecting the solution through the anterior fontanel into the longitudinal sinus. Tobler took advantage of this suggestion and later published a paper bearing on the subject. Helmholz, of Chicago, again called attention to this method in a paper published in 1915.

My own experience with the sinus route, during the last few years, has been in both hospital and private practice. At the Willard Parker Hospital with the co-operation of Captain Zingher many cases formerly were transfused at the elbow, through the basilic vein. In a series of cases of noma I employed the basilic vein, and when this was too difficult the jugular vein was used.

As a rule, in secondary anemia, there is an atony of the whole system so that it is more difficult to enter a vein, than in the normal child.

In most cases in which the basilic vein was used it was necessary to make an incision, expose the vein, and then transfix it before it was possible to make the puncture. This same applies to the jugular vein. In one case more than thirty minutes were lost in exposing and entering the vein. I have since discarded all other methods, and chosen the longitudinal sinus as the route par excellence.

The longitudinal sinus is adapted for the abstraction of blood as in venesection during convulsions. The relief afforded by this means is rapid and does not produce shock. Intracranial pressure can be relieved quickly and this method of local depletion serves as well as a lumbar puncture. This route is also adapted for procuring sufficient blood in the most rapid manner for blood culture. This point should be noted in suspected sinus thrombosis or malignant endocarditis. This route is especially valuable in procuring blood for a Wassermann test. It is a rapid and convenient place to give a salvarsan injection, or for an injection of normal saline solution as suggested by Marfan.

In septic diphtheria where rapidity of action is necessary to bring the antitoxin into the circulation, the sinus route is indicated. My own experience with this route is in the treatment of marasmic infants, with 0.2 per cent. citrated blood, as well as in the treatment of congenital syphilis with salvarsan.

In hemophilia we have an hereditary or congenital disease in which bleeding is the most important system. The bleeding may be interstitial or synovial, external, spontaneous or traumatic. The coagulation time is usually delayed. Peterson reports six transfused cases of hemophilia with excellent results. There are a few points which should be noted in procuring blood by this method. Carefully done, there is no danger of infection, nor is there any shock following the operation.

The infant should be wrapped in a mummy bandage, well pinned so that the arms and legs are confined, and placed flat on its back on the table. The head should be steadied on both sides by an assistant while the needle is inserted into the sinus. As the longitudinal sinus lies very superficial, we need rarely go deeper than 1 or 2 millimetres. For this purpose a needle one-half inch long of a 20 or 22 gauge, and with a short bevel point is best adapted. After the needle penetrates the sinus which is felt by the lessened resistance, we are ready to aspirate sufficient blood for diagnostic purposes, or transfuse the required quantity of blood or medication. The fluid, be it saline or salvarsan solution, is best given by gravity (Helmholz) and should be given slowly. A cylinder with a capacity of 30 to 100 c. c. may be used. One end of a piece of rubber tubing is attached to the cylinder and the other end has a connecting tip which fits into the needle. It is of advantage to have a stopcock at the end of the cylinder or near the end of the tubing. The needle is inserted with a small syringe attached. By slight aspiration one can determine whether the sinus has been entered, if so, the syringe is detached and the apparatus for the injection, which has been filled and the air expelled, is connected.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 22, 1918.

During the injection the infant should be closely observed—his color, pulse and respiration noted.

Case 1. A marasmic infant, breast fed, when one month old weighed six pounds. The infant did not nurse well, was cyanotic, and the extremities were cold. The stools were green and contained curds. The weight was stationary for several weeks. The infant was restless. I decided to transfuse. Thirty cubic centimetres of citrated blood was injected through the longitudinal sinus, and an immediate change in the color of the skin, also in the surface temperature of the extremities, was noted. The infant cried louder, seemed more satisfied, and the stools showed a better metabolism.

In three days after the transfusion the infant showed a gain of two ounces in weight. As the first injection was successful it was decided to wait one week and then inject 2 ounces of citrated blood. After the second injection the infant gained in weight, nursed better, slept better, and seemed to have a new lease of life. So rapid was the improvement that what appeared to be a lifeless infant was transformed into a very lively specimen within three weeks after the second transfusion.

Case 2. An interesting case is that of an eleven months old child in the ninth week of pertussis. The paroxysmal stage was unusually severe. Convulsions both clonic and tonic in character followed most paroxysms. The fontanel was tense and bulging, there was extreme cyanosis, and several times a condition of apnoea followed. With the aid of violent massage at the apex, the heart responded. After respiration and the circulation was re-established a needle was introduced into the longitudinal sinus and 30 c. c. of blood withdrawn. A rapid change took place, the paroxysms of cough, although as violent as before, were not followed by convulsions after the intracranial pressure was removed.

Many cases are reported in which an intravenous injection of 35 c. c. of blood in the newborn infant save life. S. W. Lambert reports the case of an infant suffering with a haemorrhage of the umbilicus after the cord dropped off. With an intrasinus injection of 35 c. c. of blood the haemorrhage ceased and the infant recovered from shock due to loss of blood. Peterson, of New York, saw an infant eighteen days old in a critical condition, after bleeding six days. On the twelfth day there was a haemorrhage from the umbilicus which continued for six days. By the syringe-canula method blood was taken from the vein of the donor, and 35 c. c. was injected into the longitudinal sinus through the anterior fontanel. Also an intramuscular injection of 15 c. c. was given. The haemorrhage immediately stopped.

Summary: The sinus route is safe and most easily accessible. There is no danger of transmitting infection if the skin and needle are sterile. The needle should be very sharp. Some operators prefer a short bevel point. I have best results with a long bevel point, but this is an individual preference.

The longitudinal sinus is the most easily accessible venus current in the body. Its large caliber is well adapted for both procuring blood rapidly when a Wassermann reaction is required or when an intravenous medication is to be given.

The site is especially indicated for rapid transfusion in marantic infants.

The shock incident to the exposure of the vein, be it ever so slight, is avoided in the sinus route.

Salvarsan injections are very easily given through the longitudinal sinus.

When toxic diphtheria requires the most rapid administration of antitoxin, the sinus route is most advantageous.

Intracranial pressure has never been noted by me following this method of transfusion. When bulging fontanel was noted, it was usually associated with distended lateral ventricles, and is no contraindication to sinus treatment.

When a warm saline injection is indicated, from 50 to 100 c. c. can easily be added to the circulation.

When blood letting is indicated, as in convulsions, the sinus route offers the most convenient place for depletion.

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Legend for Illustration. I am indebted to Lieutenant Minsk for his valued co-operation with illustrations at the Willard Parker Hospital.

REPORT OF A CASE OF PICA WITH UNIQUE COMPLICATIONS.*

By ARTHUR W. BENSON, M.D.,
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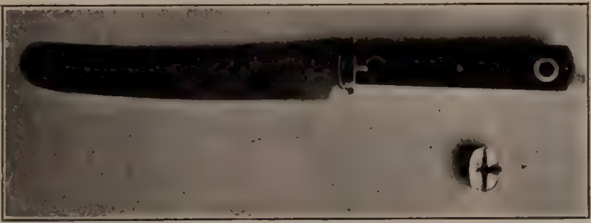
THE subject of pica has always been of considerable interest to the medical profession. The literature, however, is surprisingly meagre, and it is for this reason that I shall take the liberty of reporting a case which has certain unusual features and complications:

J. M. is a school girl; will be seven years old upon May 27 and was, therefore, about six and one-half years old this past November.

Upon Thursday, November 15, 1917, she came home from school, about 11 A. M., feeling weak, faint, generally wretched and complaining of severe headache. She lay upon the lounge, refusing to be moved or to eat until about 4 o'clock that afternoon, when she quickly summoned her aunt with the cry, "Quick, I'm going to vomit." Before a receptacle could be brought she had expelled practically the entire contents of her stomach, consisting largely of partly masticated and partly digested raw apple which she had devoured the previous day; and almost immediately she had a bowel movement which was apparently of fair amount and normal consistency. Within ten or fifteen minutes she called for the chamber again, passed from the bowel about a cupful of what appeared like "undigested apple mixed with tomato," at the same time experiencing severe abdominal pains and violent wretching.

From that time forward, through all of Thursday night, all day Friday, through Friday night, Saturday and Saturday night the bowels moved repeatedly. Scarcely a singe hour elapsed but what the little patient had at least one bowel movement, always of small quantity, consisting almost wholly of bright red blood and mucus. These bowel movements were always accompanied by severe colicky abdominal pains, and when there was vomiting, as so often ensued, the material expelled was always grass green, contained some mucus but never gross blood. Milk, broth or even water, were usually refused, and when taken could not be retained in the stomach. There was considerable prostration, at times extreme exhaustion, and with vomiting, the forehead was covered with beads of perspiration. Following each bloody passage the lower bowel was washed out with plain cool water.

About 1 o'clock on Sunday (November 18), while the child was upon the bed-pan, a noise was heard as if a pebble were dropped into the metallic basin. The contents of the bed-pan was examined and there was found, in addition to about a tablespoonful of bright red blood, an oval piece of lead 1.8 cm. long, 1.3 cm. broad and .4 cm. in thickness. One surface was slightly convex and essentially smooth; the other side was slightly depressed, roughened and a deep groove or trough ran lengthwise from end to end. Midway and just to one side of the longitudinal groove a *cuboidal prominence* projected perpendicularly from the roughened surface. Its edges were somewhat sharp and irregular, and it seemed probable from the foregoing and subsequent events that this projecting eminence was mechanically responsible for the bleeding. Straightway, diligent search was made about the house, for no one surmised what such a piece of lead could be. Finally, however, it was determined that it exactly tipped the handle of an ordinary kitchen knife, and the child's aunt assures me that, to her knowledge, this tip-end had been missing for at least two years. Where the child found it and the time of passage through the gastro-intestinal tract is an open question. When the foreign body was passed there was moderate vomiting. Thence forward, all nausea and vomiting ceased, and within a few hours the child began to eat ravenously.



The last bright red stool was noted upon Sunday evening, some six to eight hours after the expulsion of the foreign body. That night for the first time in three days the child enjoyed a continuous and refreshing sleep, and when she awoke next morning she had a bowel movement dark red in color. The frequency of the movements now rapidly decreased, there was more and more substance to them. Next day they were tarry black, and when I first saw the child on December 6 (nearly three weeks after the beginning of her illness) they were still moving four to five times a day, semiformed, greenish yellow and streaked with black.

Next day, December 7, she was admitted to the Samaritan Hospital, put to bed, and during her stay with us, kept strictly upon a meat-free diet. The medication consisted of calcium lactate grains 15 t.i.d, and sweet wine of iron drams b.i.d. A warm starch enema was given every morning.

Upon December 8 there were three bowel movements. They were semi-formed, of a dark brown color, contained some mucus and were quite offensive. The *urine* was examined and reported: Light, slightly cloudy amber, s.g., 1010, acid, containing no sugar, acetone nor indican but a faint trace of albumen. Microscopic examination negative. The child's *hemoglobin* (using Sahli instrument) registered 76 per cent. Two X-ray pictures were taken in the fear that some other foreign body might be discovered, but the result was negative.

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December 9 was entirely uneventful. The patient has passed a comfortable night, and the enema returned almost clear—there was a small amount of mucus and greenish yellow material. No movement of the bowels occurred.

Upon December 10 the child was allowed to sit up for three hours. There occurred but one bowel movement—light yellow, semi-formed containing some small brownish particles. The *Guaiac* test for blood was strongly positive. The morning enema returned practically clear but with a small amount of light yellow feces and a little mucus.

Upon December 11 the patient sat up for several hours, had one light yellow well-formed stool and the enema was omitted.

Early on the morning of December 12 she passed a yellow, well-formed stool, without visible mucus. The Guaiac test was made and found negative for blood, consequently she was discharged and taken home that afternoon. All medication was discontinued except the sweet wine of iron and she has made a complete and uneventful recovery.

During her stay in the hospital the temperature was always subfebrile, ranging from 98 to 99 degrees Fahrenheit.

I saw her last upon March 12. She was in good health, and the Hb. was 94 per cent.

A study of the child's past history and inheritance I found extremely instructive and interesting:

Inheritance. She is the mother's only child; was born at full term; the labor was normal, and so far as is possible to determine she has been singularly free from the usual diseases, disturbances and injuries of childhood, though up to three years of age (when she came to live with her aunt) there had apparently been no effort to give her proper care. I could obtain no history of syphilis, nervous diseases, mental deficiency nor insanity among her forbears.

Food and appetite. She was nursed but a few weeks, was then weaned suddenly and put upon uncertain proportions of sugar, water and cow's milk. It seems probable that very early she was given any sort of food which was conveniently at hand. It is said that from the first she had a ravenous appetite and would consume large quantities of food. She will fairly "stuff down" such food as is allowed her at meal time, and watches every opportunity to patronize the pantry between meals. Her appetite is never satisfied. She is very fond of sweets, craves pickles, mustard, ketchup, etc., and would have all her food highly seasoned.

From babyhood she has relished not only legitimate articles of diet, but has been observed to swallow dirt, pebbles, peach stones, plum pits, soap of all sorts, and often goes about with a great variety of substances and objects in her mouth. She simply devours wooden lead pencils, and the rubber ends are considered a special delicacy. She has never been seen to eat cloth or hair, but has the peculiar habit of drawing her hair-braid through her mouth and holding it in her teeth. She is a great gum chewer.

Intellect. I believe that the child may be termed really precocious, though she has already fallen one year behind other children of her age in school, and there is every reason to believe that she will have to repeat again the greater part of the past year's studies. She is very observant, her mind is retentive and when she wants to she can memorize verse or prose with startling facility.

Disposition. She is lazy, selfish, greedy, unappreciative, ungrateful, vindictive, entirely unreliable, lying at the least provocation and sticking to her false statements to the bitter end. Her intentions are frequently malicious and her actions vicious—she has been seen to kick, scratch and bite her playmates, and on one occasion she bit the breast of a little baby till the blood came. She is not profane, but careless in her speech, evidencing an almost shocking knowledge of things that should not be known by a girl of her years.

All this, in spite of the fact that her home surroundings are all that could be wished and that a serious effort is constantly made to impress her with proper thoughts and high ideals.

Discussion.

Perversion of appetite or "parorexia" is a condition which has been recognized from the dawn of civilization. It is to be found to some extent among every race, and in every country [1], [10], [11], [12], [13], [14], [15], but it is especially prevalent among certain barbarous and half-civilized peoples.

To approach the subject fairly, we must be careful to allow for legitimate peculiarities of taste and diet, and furthermore there are to be distinguished various kinds of perversion of appetite—allotriophagia, malacia, pica.

(a) *Allotriophagia* signifies a desire for disgusting substances, *e. g.*, decomposed material, urine, feces, etc. I have recently had under my care at the Day Home an Italian child of two years, who was discovered eating feces from a chamber and has been observed sucking his dress when wet with urine. It may be recalled that George the First preferred bad to fresh oysters.

(b) *Malacia* implies a craving for highly spiced foods and condiments, such as chilli-sauce, mustard, pepper.

(c) *Pica* (Latin—jay or magpie) suggests an appetite for substances which are not foods—soap, wax, wood, dirt, plaster, etc.

PICA.

Pica has been frequently noted among lower animals, especially lambs.[3] It is very common in the insane, among idiots and imbeciles[3] and sometimes is met with in pregnant women and in hysterical and chlorotic girls. It is, however, with pica of infancy and childhood that we are chiefly concerned, which Thomson[3] has separated into two classes, though he admits it is not always easy to settle into which of these an individual case belongs.

He says: "There are, first, those cases in which the habit begins at any age, with marked deterioration of the general health of which anemia is usually a symptom. Patients of this cachectic class may be suffering from a variety of curable and incurable conditions, such as rickets and bronchitis,[4] round worms,[5], [6], apparently; dispathic anemia,[7] malignant tumor,[8], tuberculosis.[9]

"Secondly, there are the larger number in whom the morbid craving develops in early infancy, as opportunity for its indulgence offers, passing off gradually in most cases, even if untreated when the child is about three years old."

Thomson carried eleven cases, two and perhaps three of which belong to the first or cachetic class; the other cases fall logically in class "Two."

Still[16] in 1912 outlined the histories of fourteen cases and laid considerable stress upon the etiology. He emphasized that in the majority of cases there is associated a "nervous temperament" and digestive disorders. Hutchinson[17] had already noted that pica not unfrequently accompanied a chronic gastro-intestinal catarrh.

Many writers insist that pica is simply the exaggeration of a normal habit among infants who invariably place anything and everything within reach in their mouths. Koplik,[18] in classifying pica under bad habits, says that "it is not necessarily an indication of serious nervous functional disturbances and that it is difficult to say from a purely clinical standpoint whether such bad habits lead to any serious results." Still[16] says: "I have never seen any serious harm come from this habit." Holt[19] places pica among functional nervous diseases and considers it akin to such injurious habits of infancy and childhood as masturbation, nail biting and head banging.

The most comprehensive outline for treatment has been given by Thomson, who says that medicines are rarely indicated, and that the therapeutic measures are mainly four.

First. Do not allow these children to obtain the substances for which they have a morbid craving.

Second. Rectify any digestive disturbances with due attention to diet.

Third. Improve the general health.

Fourth. Whenever possible, change the environment, occupying the mind with new experiences, keeping these children busy and happy.

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RECENT ADVANCES IN THE BACTERIOLOGICAL DIAGNOSIS OF PNEUMONIA.*

By O. W. H. MITCHELL, M.D.,
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IN this discussion the importance of the bacteriological examination of sputum for pneumococci will be emphasized.

For some years it has been known that marked differences existed between various strains of pneumococci. In 1891 Kruse and Pansini[1] studied 84 strains of pneumococci and were impressed with the cultural and morphological differences and the variation in virulence. They considered, like many investigators, the streptococci as organisms very similar if not identical with certain strains of pneumococci. More recently Rosenow[2] made the claim that pneumococci may undergo transmutation to streptococci. This observation has not been confirmed.

The investigations of Neufeld and Händel[3] Dochez[4], Dochez and Gillespie[5], and others have demonstrated that pneumococci may be divided into four groups, spoken of as Types I, II, III, and IV. As far as known, one type does not change into another. Without entering into a discussion concerning the different types, suffice it to say that most interest has been attracted to Types I and II.

Lobar pneumonia is one of the best examples of a so-called "self-limited disease." Aside from the use of a few remedies employed for heart stimulants or some similar purpose it may be said that medicinal substances are of little value in the treatment of the disease. Reliance is placed mainly on such general measures as abundance of fresh air, prevention of chilling, proper diet and good nursing. The more it is realized that we are dealing with an infection caused by a specific group of bacteria the greater have become the efforts to find specific substances to combat the infection. With the understanding of pneumococci made much clearer by the recognition of the different types several investigators have attempted to produce specific immune sera. In this country Cole[6] has made an extensive study of the subject and his numerous publications are familiar to you. The Division of Laboratories and Research of the New York State Department of Health has undertaken the work on a large scale. Under the direction of Dr. Wadsworth Type I serum is distributed under properly controlled conditions. The physicians of New York State will soon know the efficacy of such serum in the treatment of lobar pneumonia caused by Type I pneumococcus.

Before attempting to use serum in the treatment of this disease it is essential that the type of pneumococcus causing the infection be determined. If the administration of the immune serum is to be withheld until the type is determined then such a determination must be made as speedily as possible. The mouse inoculation and cultural methods for obtaining pneumococci for agglutination tests are very satisfactory for recognizing the type, but are objectionable because of slowness.

Blake and Avery[7] have shown that the pneumococcus produces a specific soluble substance during growth and also[8] that such a substance may be demonstrated in the blood and urine of a patient suffering from lobar pneumonia. This substance gives a specific precipitin reaction with its homologous serum and is just as reliable as an agglutination test. Blake[9] found a soluble substance in the peritoneal washings of mice inoculated with pneumonia sputum, which gave specific precipitin reaction with homologous sera.

With these data as a basis for further work Muns and myself[10] made an attempt to demonstrate a soluble substance in pneumonia sputum which would give a specific precipitin reaction with homologous serum. We were quite successful as our published results show. In brief the technique is as follows: Representative pneumonia sputum—that is, sputum raised from the lungs—is collected in a sterile container and sent to the laboratory as soon as possible. Ten c.c. or more should be collected. The sputum is ground with clean sand, then normal saline is added. After mixing well, the preparation is allowed to stand until the fluid collects on top of the sand. This fluid is then collected and centrifugalized. The clear fluid is added in proper proportions to the diagnostic sera, I, II and II. A positive reaction is noted in a short time by the formation of a characteristic precipitate in one of the tubes if one of the three types of pneumococci has been encountered. By means of this test a type diagnosis may be determined in an hour or less. A modification of this method has been described by Krumweide and Valentine.[11] Their results were very satisfactory. The rapid cultural method of Avery[12] is another test which is quite rapid and particularly valuable for cultures when mice or young rats are not obtainable.

Methods for the rapid recognition of the different types of pneumococci must be perfected as well as potent sera if the serum treatment of pneumonia is to be the success we hope for it. Up to the present time the progress has been most encouraging.

In Syracuse, N. Y., the organisms causing

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199 cases of lobar pneumonia have been studied. Their classification is as follows:

Organism	No. of Cases	Per Cent of Total	Deaths	Death Rate
Type I	35	17.5	5	14.3
Type II	9	4.5	4	44.4
Type IIx	6	3.0	2	33.3
Type III	20	10.0	7	35.0
Type IV	104	52.0	17	16.3
Streptococci and other organisms.	25	12.5	5	20.0

Seventeen of the Type I cases received I serum intravenously. The smallest amount given to any one patient was 50 c.c., the largest amount was 200 c.c. There were two deaths. In one case the patient suffered from typical lobar pneumonia and showed a marked improvement following the use of serum, two doses of 50 c.c. each. A few days later the patient became very ill and a streptococcus was isolated from the blood stream. Death occurred on the 20th day. The other case suffered from involvement of both lungs and was extremely ill. Only 100 c.c. of serum was administered and that was on the 5th day. Death occurred about 30 hours afterward. There were 18 cases of Type I infection which received no serum. Three of these individuals died.

These investigations were made possible by a coöperation between the City Laboratory of Syracuse and the Department of Bacteriology, Hygiene, and Sanitation, College of Medicine, Syracuse University. The diagnostic and therapeutic sera were furnished by the Division of Laboratories and Research, New York State Department of Health. In this study I have had the assistance of W. E. Muns and George A. Group, of the College of Medicine, and the physicians of Syracuse whose kindness has been greatly appreciated.

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THE OFFICE OF CHIEF MEDICAL EXAMINER; ITS RELATION TO THE PUBLIC, THE DISTRICT ATTORNEY'S OFFICE AND THE MEDICAL PROFESSION.* †

By **CHARLES NORRIS, M.D.,**
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I AM delighted to have the opportunity of addressing the Medical Society of the County of New York upon the newly created office of Chief Medical Examiner of the City of New York. The time at my disposal necessitates only a limited exposition of the workings or functions of the office. A legislative act, which became a law April 4th, 1915, established the office of Chief Medical Examiner and thereby abolished the office of coroner—the act to take effect on January 1st, 1918. The functions of the office are entirely investigatory. To be brief, the determination of the cause of death—a medico-legal investigation which may require the aid of refined bacteriologic and pathologic methods and a familiarity with gross pathology which comes only to those who have had a long and varied experience in this important field of practical medicine. I have chosen as the title of my address "The Office of the Chief Medical Examiner; its Relation to the Public; the District Attorney's Office and the Medical Profession." In order to explain these matters, allow me to briefly outline the law under which the office was established.

Section 1571 of the law reads: "When, in the City of New York, any person shall die from criminal violence, or by a casualty, or by suicide, or suddenly when in apparent health, or when unattended by a physician, or in prison, or in any suspicious or unusual manner, the officer in charge of the station house in the police precinct in which such person died shall immediately notify the office of the chief medical examiner of the known facts concerning the time, place, manner and circumstances of such death. Immediately upon receipt of such notification the chief medical examiner, or a deputy or assistant medical examiner, shall go to the dead body, and take charge of the same. Such examiner shall fully investigate the essential facts concerning the circumstances of the death, taking the names and addresses of as many witnesses thereto as it may be practical to obtain and, before leaving the premises, shall reduce all such facts to writing and file the same in his office. The police officer so detailed shall, in the absence of the next of kin of deceased person, take possession of all property of value found on such person, make an exact inventory thereof in his report, and deliver such property to the police department, which shall surrender the same to the person entitled to its custody or possession. Such examiner shall take possession of any portable objects which, in his opinion, may be useful in establishing the cause of death, and deliver them to the police department."

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* Read at the regular Meeting of the Medical Society of the County of New York, in New York City, December 23, 1918.

† In a paper entitled "Practical Pathology," read April 16, 1918, at a joint meeting of the Kings County Medical Society and the Brooklyn Pathological Society (published in the *Long Island Med. Jour.*, Vol. XII, pp. 201-210), various other phases of the work of the office have been brought out.

In the following words, under the section "Autopsies; Findings," it says: "1571-a. If the cause of such death shall be established beyond a reasonable doubt, the medical examiner in charge shall so report to his office. If, however, in the opinion of such medical examiner an autopsy is necessary, the same shall be performed by a medical examiner. A detailed description of the findings written during the progress of such autopsy and the conclusions drawn therefrom shall thereupon be filed in his office."

Under the section "Records": "1171-c. It shall be the duty of the office of medical examiner to keep full and complete records. Such records shall be kept in the office, properly indexed, stating the name, if known, of every such person, the place where the body was found and the date of death. To the record of each case shall be attached the original report of the medical examiner and the detailed findings of the autopsy, if any. The office shall promptly deliver to the appropriate district attorney copies of all records relating to every death as to which there is, in the judgment of the medical examiner in charge, any indication of criminality. All other records shall be open to public inspection as provided in section fifteen hundred and forty-five. The appropriate district attorney and the police commissioner of the city may require from such officer such further records, and such daily information, as they may deem necessary."

You will see that these sections determine when an autopsy is necessary and when a case may be closed on examination; and it also requires that post-mortem records shall be dictated on the spot to a stenographer. In my opinion, the law is admirably drawn up for effective work.

In order to perform this work, under the title "Organization of Office," the law reads that the chief medical examiner may appoint and remove such deputies, assistant medical examiners, scientific experts, officers and employees as may be provided for pursuant to law. In the past no decent provision for the chemical examination of the viscera of cases of known or suspected poisoning existed. The law under which the coroner's office worked provided that experts might be employed at county expense to make the analyses. In cases that did not assume prominence, the Department of Health occasionally performed the work. The material was sent to them in a very unsatisfactory manner, usually without any history as to the poison suspected. The investigatory functions of the chemical laboratory of the Chief Medical Examiner's Office are of the greatest value in determining the cause of death in suspected cases of poisoning from alkaloids, metals, etc. The proper presentation of the evidence of poisons before the courts is a matter of the utmost importance in many cases of homicide, suicide and abortion, and even in accidental cases of poisoning. In the past, for the want of the proper legal presentation, many cases have been lost in the courts.

Chemical examination of the organs, even in known cases of poison, where there is suspected criminality, should be done in every case. This work has been done for the medical assistant of the district attorney of New York County since this office was created in 1915, and previous to this time for a few of the coroners' physicians who asked for this departmental courtesy, by the pathological department of Bellevue Hospital. During the past four years the pathological chemist of Bellevue Hospital has also investigated the poison cases occurring in the prison wards and has also analyzed the various secretions and excreta of the suspected cases of poison in the other wards of the hospital.

During the recent gas epidemic the spectroscopic examination of the blood of gas asphyxiations and various tests for carbon monoxide were performed by the assistant medical examiners and by the laboratory.

The necessity has been recognized of preserving evidence for court presentation in cases of suspected homicide through gas asphyxia, and we have adopted the method which enables us to do this.

The Public: The duties to the public are in the main prompt service and courtesy, the issuance of death certificates, the performance of autopsies in accident cases to protect the civil rights of the relatives of the deceased in the one case and in the other insistance on the performance of post-mortems to protect private and hospital physicians. To illustrate my point, let me mention briefly two cases:

The first is that of a young boy who was struck by a rod projecting from an automobile. He had a superficial abrasion over the right eyebrow, and in falling broke his left leg. He was taken to the hospital. The fracture united kindly, and in the afternoon of the day of his death, after he had been 28 days in the hospital, he complained of feeling badly, vomited and rapidly passed into a state of collapse and died, with the history of six hours' acute illness only. Being on tour that night, I was at first inclined to issue a death certificate, but was puzzled as to the cause of death. It seemed reasonable to suppose that the accident he had received four weeks before had nothing to do with his death. There was still apparent a very slight scar above the eyebrow. I did not know at the time that an arrest had been made. I was unable to perform a post-mortem at the hospital, as there were no instruments available and the room used for post-mortems is dark, being situated in the cellar. The people being anxious to obtain the body, I had the undertaker remove it to the house and the next morning the undertaker brought the body to the City Mortuary for autopsy. There was found a delicate linear fracture of the frontal bone, extending through the orbital plate into the cribriform plate opening the anterior ethmoidal sinuses. A well-marked suppurative meningitis of at least four or five days' duration was found. Gram positive lancet-shaped diplococci were seen in the smears. The body had already been embalmed so no cultures were made. After the autopsy I found out, after a considerable amount of time had been spent on the telephone that an arrest had been made. My point in bringing this case to your notice is that the rights of the family of the deceased are only protected in such a case by an autopsy for it would be impossible, in view of the history of the case, to make a diagnosis of meningitis, and the connection between the accident and the meningitis, I think, is clear. Pneumococci are present in a large percentage of cases in the accessory cavities of the nose. Had I not performed an autopsy it is probable that I would have issued a death certificate which would not have protected the rights of the family.

The following case illustrates the necessity of performing an autopsy for the purpose of protecting hospital physicians. A traffic policeman is run down by an automobile; is removed to a hospital. On account of abdominal symptoms; namely, rigidity and pain, he is operated on. A small amount of fluid blood is found in the peritoneal cavity but no evidence of injury to the viscera was ascertainable. Hematoma of the right eye and sub-conjunctival ecchymoses were present. He lived a week in the hospital. I was inclined to issue a certificate of death from fracture of the skull, but decided later, in view of the operation, to perform an autopsy. There was no fracture of the skull and no meningitis. A very extensive sub-peritoneal hemorrhage, especially marked in the pelvis; the source of the hemorrhage, a fracture of the left pubic bone. There evidently had been a very slow leakage of blood. No peritonitis was found, but there was a marked paralytic ileus, the small intestines being enormously distended and filled with fluid, this being the actual cause of death. The staff had had great difficulty in opening his bowels. My point in bringing this case up is that the family, without autopsy, might have accused the hospital, claiming the death was directly due to the operation.

Let me call your attention to the wording of the Workman's Compensation Law: Section 3, definition 7, which reads, "Injury and personal injury mean only accidental injuries arising out of and in the course of employment and such disease or infection as may naturally and unavoidably result therefrom." The determination of the casual relation of accident to death is often a most difficult task and is, in many cases, of great value to the family in the settlement of their insurance claims; in such cases, bacteriological and microscopical examinations are indispensable, also accurate and complete stenographic autopsy protocols, in order that they may serve as court records in the settlement of accident claims and death benefits under the compensation law. The law is very properly worded and takes full cognizance of the importance of such cases. At the present time we are forced to train a small force of stenographers in order that they may become competent to take this highly specialized dictation. It is important that the medical examiners should testify only to matters of fact and of evidence, not on opinion, except as it may be asked for on either side. It is my aim to have the office of medical examiner avoid the numerous errors of the past which necessitated re-examinations or so-called secondary or fresh autopsies which entail exhumation in accident or homicide cases, at large and unnecessary expense.

Relation of the office to the district attorney: The office sends to the district attorney the reports of death of all cases of homicides, suicides, cases of poisoning and all suspicious cases. They include the chemical reports, and any evidence indicating criminal negligence in accident cases, and copies of the testimony taken under oath. The office, unlike the coroners', holds no inquests. This work is performed by the grand jury, the magistrates and the district attorney. The medical examiner and all deputy and assistant medical examiners may administer oaths and take affidavits, proofs and examinations as to any matter within the jurisdiction of the office. One of the most serious tasks of the office is the determination of criminal negligence in accident cases. Allow me to give you a few illustrations of the character of the work which the office is attempting to perform which, heretofore, to my knowledge, has not been attempted, but work which is clearly within the province of the office and which is not performed by other departments of the city.

The first case concerns the death of two workmen who entered a manhole of an electrical conduit. The first man to descend the ladder, a distance of about sixteen feet, promptly keeled over. A second workman descended, in order to rescue him. He likewise promptly keeled over. Firemen fially removed the bodies; one or two of them, however, being also overcome. The rescuers were revived and, although a pulmotor was used upon the first two workmen their death followed within a short time of their removal.

Dr. Schwartz and myself reached the scene as soon as possible; namely, within an hour. The manhole was closed until we were able to get Dr. Gettler (the pathological chemist) and the laboratory assistant to the scene with bottles. An analysis of the air was made and it was found to contain 12 per cent of carbon dioxide. An autopsy was performed on one of the bodies and, except for general congestion, nothing was found. The lid of the manhole was ticketed with a metallic tag marked "Danger CO^2." The death certificates read "Carbon Dioxide Poisoning." The exact cause is more likely to be due to a lack of oxygen, only 4 per cent being found. In this case, the company is not to blame for the reason that the manhole had been properly labelled and the workmen had all been warned not to enter until the manhole had been thoroughly blown out.

Recently, in a hotel a woman was overcome after cyanide disinfection of one of the rooms. An autopsy was made and evidence of cyanide poisoning was found by chemical tests, in the lungs and brain and no other cause of death was ascertainable. The agents of the disinfecting company, in this case, were in my opinion, distinctly at fault in allowing people to enter the room before it had been sufficiently ventilated.

It is a function of the office to see that appropriate measures are taken to force the companies to exercise more care. Several cases of deaths have occurred from the inhalation of chloroform by habitues. Steps are being taken to include chloroform among the articles which cannot be dispensed without a physician's prescription. The office performs a large number of chemical examinations of the viscera to protect the public from methyl alcohol. A large number of examinations are made to detect the presence of opium and its derivatives. The determination of opium and heroin at times, without a history, is most difficult. Dr. Haines, the distinguished toxicologist of Chicago, has called my attention to the difficulty of detecting opium in the bodies of habitues, the tests often being negative in these cases. It would seem as if the opium was split much more rapidly in habitues than in fatal cases from overdoses in non-habitues. Dr. Gettler and myself have been able to develop a method for the detection of salvarsan and its substitutes. Dr. Gettler has analyzed a number of known cases of salvarsan poisoning, and we are able to state that this method is valuable in the detection of suspected cases.

To be brief, the policy of the office is to bring out all the facts, medical, pathologic or chemic, and to present all such evidence in proper fashion; that is, to make direct and trustworthy inferences and at the same time to avoid the danger of looking at facts through the spectacles of theory. Any failure or neglect of this cardinal rule destroys at once the independent standing of the office. As stated before, the functions of the office are investigatory. The prosecuting branches are in the hands of the district attorney and the police department. You will see that there are grave and urgent reasons for the separation of this office from the police and that of the district attorney and that the office should not be a bureau of these departments, but a separate department of medico-legal inquiry. For all practical purposes however, the three departments have and must always work hand in hand. The medical examiner's department, on the other hand, is subject to the jurisdiction, of the department of Health which "may, from time to time, make rules and regulations fixing the time of rendering, and defining the form of returns and reports to be made to said department by the office of chief medical examiner. In all cases of death which shall be investigated by it, the office of chief medical examiner is required to conform to such rules and regulations." Section 32 of the Sanitary Code requires that "the assistant medical examiners shall in their certificates conform to the requirements of this section, and where death shall have resulted from accident, homicide or suicide, shall specify how, when and where the injuries causing such death were received."

Last winter there were a very large number of cases of asphyxiations by illuminant gas. From January 1 to November 1, a period of ten months, the office passed upon 421 accidental asphyxiations (198 in Manhattan and 168 in Brooklyn). In addition, there were 8 homicides by illuminant gas (one in Manhattan, 6 in Brooklyn and one in the Bronx), and 257 suicides by illuminant gas (133 in Manhattan and 94 in Brooklyn). The long and cold winter was largely responsible for this outbreak and there was a decided increase in cases when the spring thawing of the frozen pipes occurred. As a result of our experience in this winter, I wrote a letter to the president of the Board of Aldermen, the Hon. Alfred E. Smith, calling attention to this matter and stating that, in my opinion, an ordinance based somewhat after the ordinance passed several years ago in Newark, N. J., would be advisable. The matter at the present time is under consideration by the board.

The determination of death from illuminant gas in most of these cases is an easy matter. A number of cases are reported without history and in these, unless great care is exercised at the time of examination, the poisoning escapes detection. We have made it our policy that whenever possible the man on tour make the sodium hydroxide test with a few drops of the blood. Sometimes there is concealment of the fact of gas and at other times the smell of gas is not detected by people who enter the room—oftentimes excusable, for many people do not possess a keen sense of smell.

One case I recall, where there was two or three hours' delay in reporting the case to the police—a delay which was increased by failure on the part of our office to promptly go to the scene—in which the determination of the cause of death by carbon monoxide was rendered difficult. In this case papers were removed from the room before the police were notified and the circumstances were most suspicious.

There have been 15 cases of asphyxia from coal gas. The coal gas escaping through leaky flue connections of the water heaters situated in the cellar. In one case, in which many people in a tenement house were overcome, two of them dying, the two people who died were found on the fourth floor of the house, lying in a room immediately overhead of the flue of the water heater. The Tenement House Department was notified.

To the Medical Profession: This part of my subject is the one which interests me very greatly. The medical work of the office is performed by eleven assistant medical examiners. One of these is an acting deputy, who helps me in the important cases at night. The deputy performs the autopsies at the City Mortuary, with my assistance. Owing to geographical reasons, the work of the various offices differs. The Manhattan office in the ten months has handled 5,280 cases; it has four medical examiners. The Brooklyn office during the same period has had 3,322 with only two medical examiners. The Manhattan office at the present time is more favorably situated in the matter of help and ability to perform the work than the other boroughs. Every effort was made to increase the staff of the Brooklyn office, without success. The territory is a very large one, the means of communication are poor and they only succeed in doing their work in this borough, as well as in the Bronx, in Queens and in Richmond, because of the fact that the medical examiners have their own automobiles. Although transportation forms one of the main problems of the office, we have been unable to obtain fair treatment. A small sum of money, namely $2,150, was assigned last year for automobile hire for all the boroughs and for the ensuing year this sum was reduced to the sum of $1,750 and the same sum was appropriated for car fares. The law, under which the office works, requires that the medical examiner proceed to the scene at once. You will see that it is almost impossible to do so in every case promptly and we are only able to overcome the difficulty in Manhattan by the fact that either Dr. Schwartz or myself always stand ready to proceed to a case as soon as possible, if the man on tour cannot be located. The medical examiners are on duty every day of the year; when vacations are necessary or in case of illness, it becomes almost impossible to manage the situation properly. No vacation allowances are made and no money for substitutes is provided. In the case of Brooklyn, which has only two medical examiners, it means, since one man cannot take care of the office, that they have to pay for their vacation substitutes themselves. What makes the situation so difficult, especially in Brooklyn, is that the medical examiners have to attend the grand jury and the magistrate's court and in the case of homicides, the trial court. They are also frequently asked to testify in accident cases.

My point in bringing out this weary detail of the routine life of the examiners is to testify to their extreme good nature and the high sense of civic duty they exhibit. The remuneration, namely, $3,000 a year, is totally inadequate, especially when one considers the fact that those who have automobiles use up almost every year at least more than half their salary in attending to their cases. Under the coroner's office, the law did not provide for immediate attendance and frequently the bodies were removed to their residence or to the undertaking shops on the order of the coroner or the telephone clerk of the office.

At the present time the chemical department is the only one which is on a (if I may use the term) elevated plane, in correspondence with the performance of our duties according to the highest standards of thought current at the present time. Whenever possible, all the poison cases in Manhattan are sent for autopsy to the City Mortuary, which is situated on the second floor of the pathological building of Bellevue Hospital, the chemical floor being situated on the fourth floor, so that there is easy access to the chemist. In the other boroughs, we have instituted a system of conveying the viscera for analysis to the City Mortuary by means of so-called army travelling bags, containing chemically clean glass vessels as receptacles. The autopsy work is performed in the other boroughs with the greatest difficulty, with the exception of the autopsies which are made in the Kings County Hospital, Brooklyn, where they have decent laboratory facilities. As you know, in most of the hospitals, it is practically impossible to perform autopsies properly and it is largely on account of this reason that we have been forced to transfer many bodies from such hospitals to the City Mortuary. The law compels us to take accurate notes at the time of autopsy. You will realize the importance of this since they become of legal value in cases of homicides and accident cases coming to trial. It is certainly not too much to expect at this age and in this community that the physicians doing this important work should not quote from memory as has frequently happened in the past.

Although the department, as I have stated above, is well equipped, or at least has made a good commencement in chemical and toxicological examinations of the cases coming under our observation, the same cannot be said for what I may term the other scientific branches of this department; namely, the microscopic and bacteriologic examinations. We are forced in the Borough of Manhattan to call upon the pathological department of Bellevue Hospital for aid in these examinations. In the last budget we asked for the appointment of three pathologists, a laboratory assistant and a laboratory helper. Our request was not granted. I merely mention this point to show the extreme difficulty which even the Manhattan office has in performing its work. At the present time we have no facilities for performing serological reactions. The condition may be accurately described as disgraceful. It is not possible to properly perform the work of this office in the Borough of Queens, the Bronx and Richmond, where the autopsies are mostly held in undertakers' shops.

I have drawn a rather dismal picture, I fear, of the conditions which confront us. They are, however, accurate. I may state that the conditions which confront this office are similar to those which exist in all parts of this country. The examiners in our office have no opportunity for improving themselves along the line of their work. Is it too much to expect that in a country like ours, which has shown such remarkable efficiency and zeal in tackling vast problems at such short notice, that improvement should not follow in offices administered by the civil authorities? The national authorities have certainly shown they are qualified to perform any task which is before them. No improvement is possible without financial aid. I am endeavoring to obtain the same from outside sources. To perform the work of the office properly, the medical examiners must have high qualifications. It is impossible, at the present time, to obtain men thoroughly qualified for the position of medical examiner. To be a successful practical pathologist requires a thorough working knowledge or familiarity with the methods of bacteriology, with gross pathology, with the various disturbances of functions and of the chronic interchanges in the course of disease, and with clinical medicine and surgery in general. Medico-legal investigations require that the examiner be versed in the above subjects and be familiar with the technique of serological reactions, with the methods of examination of various stains, such as blood and semen, and of articles, such as hair, which may come under his critical examination. You will readily see that the demands made upon one individual are impracticable, for unless one has low standards, no individual may possess sufficient knowledge and experience to claim that he is an expert pathologist, bacteriologist and toxicologist. Nevertheless, I do not think it too much to ask that he be enough grounded in the subjects to conduct (or at least supervise) such work; that is, he should have sufficient and accurate knowledge to enable him to see that this work is properly performed. He should possess a working knowledge of the distribution of poisons in the body, not merely their local effects which may be visible on post-mortem examination. It certainly is not too much to ask that he have sufficient knowledge to realize that the examination of the contents of the tied-off stomach is sufficient in a critical examination of a poison case, whatever the nature of the poisoning.

I take it that the fault lies largely in the medical profession. Their attention has possibly not been called to the importance of the questions which confront medico-legal inquiry. I would call attention to a matter of grave importance in the medico-legal and criminal investigation of cases of abortion and suspected abortion dying in the various municipal and private hospitals, and more especially in the various sanitaria and physician's offices of the Greater City of New York. The attending gynaecologists and surgeons and their respective staffs of internes are singularly unaware of their responsibility to the prosecuting authorities; namely, the district attorneys of the counties and the medical examiner's office, in regard to the preservation of the pathological material of such abortion; namely the curettings and, in some cases, the uterus removed by hysterectomy. I feel sure that if the attention of the medical profession is called to this subject that there will be prompt improvement of this deplorable situation.

The cause of this neglect on the part of the medical profession is apparently an educational one. The students of few of the medical schools of the country are taught the responsibilities of the medical profession to the prosecuting attorneys in regard to homicides and cases of manslaughter. Many of the large city and private hospitals have at the present time a more or less well-organized pathological department, and demand made upon these laboratories for the proper preservation and recording of such pathological material which passes through their hands would seem reasonable. In the case of hospitals, which are not sufficiently endowed to have laboratories, it would seem that a request for the proper preservation (in 10 per cent formalin) of such material, in containers of sufficient capacity, would not place too great a burden upon such institutions. Attention is called to the fact that neglect to preserve such material renders physicians particeps criminis to any action which the district attorney of the county may deem necessary, and remissness in this matter should be punishable.

I would also emphasize the lack of realization on the part of surgeons and their house staffs in regard to the preservation and identification of bullets, or pieces of bullets, removed by them at operation from the subjects of homicidal attacks.

All that I have said is merely an appeal to the members of this society for their help in improving an important medical office of this city. Allow me to quote in this connection the lines from Julius Cæsar: "The fault, dear Brutus, is not in our stars but in ourselves, that we are underlings."

THE USE OF THE COLLOIDAL GOLD TEST IN PUBLIC HEALTH WORK.*

By **WALTER E. ZIELINSKI, M.D.,**
BUFFALO, N. Y.

BOTH clinical studies and laboratory investigations especially in the past few years, have increased our diagnostic ability in organic nervous diseases to a marked degree. New methods and tests have been added in rapid succession. Since the introduction of the lumbar puncture by Quincke, in 1891, the examination of the spinal fluid has become more and more frequent, and at the present time no neurologist has scientifically completed his study of a doubtful neurological case unless he has made a thorough and comprehensive study of the spinal fluid.

The colloidal gold test as applied to cerebrospinal fluid is of diagnostic and prognostic value in revealing the character and intensity of general paresis, tabo-paresis, tabes, lues, poliomyelitis and various forms of meningitis, it identifies normal spinal fluids and is helpful in tracing the response to Salvarsan, mercury and potassium iodide in the treatment of syphilis.

Lange's method for the Preparation of Colloidal Gold Sol: To 1,000 c.c. of purest, freshly distilled water, add 10 c.c. of a 1 per cent solution of gold chloride and a like amount of a 2 per cent solution of potassium carbonate. The solution is heated rapidly until it almost boils; at this point, and while stirring vigorously, add 10 c.c. of a 1 per cent solution of formalin. The previously colorless solution should at once assume a clear, intense red color, must be absolutely clear, and show no superficial smoky shimmer. Jena glass should be used throughout, there should be no rubber connections in the still and all the utensils should be cleaned with the greatest care.

The standards to which a solution must conform in order to be satisfactory for use, are as follows:

1. The solution must be absolutely transparent and preferably of a brilliant orange red or salmon color.
2. Five c.c. of the solution must be completely precipitated by 1.7 c.c. of a 1 per cent sodium chloride solution in the time interval of one hour.
3. The solution must be neutral in reaction on the day on which it is used.
4. It must give a typical reaction curve with a known paretic cerebro-spinal fluid.
5. It must show no more than a change to red-blue with a known normal fluid.

The actual performance of this test is quite easy and requires only about five minutes' time. The procedure is as follows: Into the first of 11 clean dry test tubes, reserved especially for the purpose, put 1.8 c.c. of fresh, sterile, 4 per cent Nace solution. Into each of the remaining 10 tubes put 1 c.c. of salt solution of the same strength. Now add to the first tube by means of a clean, dry, certified 1 c.c. pipette, 2 c.c. of the spinal fluid to be tested. Mix well. Transfer 1 c.c. of the resultant 1-10 dilution of spinal fluid to the second tube, and again mix thoroughly and transfer 1 c.c. of this dilution to the third tube. Proceed in this manner up to and including the tenth tube. By this method a series of dilutions of the spinal fluid is secured, in geometrical progression, ranging from 1-10 to 1-5120. Now add to each of the 11 tubes 5 c.c. of a suitably prepared and standardized colloidal gold solution, shake each tube thoroughly and set the series of tubes aside for subsequent observation. It will be noted that the 11th tube serves as a salt control, since it contains no cerebro-spinal fluid. The reaction is real at the end of one-half hour and again at the end of 24 hours. Reactions undergo little, if any, change, over a period of several weeks, provided evaporation and exposure to direct sunlight are guarded against. In like manner any given fluid, if kept sterile and on ice, will produce the same colloidal gold curve over a period of time, the exact length of which is unknown. This knowledge is of particular value since it easily enables one to keep a control fluid on hand. The presence of blood in the spinal fluid causes color changes in the first four tubes. This is very important, for occasionally one procures a bloody spinal fluid due to the lumbar puncture. We have repeatedly tested spinal fluids containing blood, either accidentally or added directly, in order to determine this point. Very small amounts of blood caused absolutely no change in the colloidal gold curve different from that produced by spinal fluid alone. However, when enough blood was present to make the spinal fluid distinctly hemorrhagic, there was a marked color change in the first four to six tubes.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 23, 1918.

Interpretation of the Results.

Normal spinal fluid will produce no color change. The color in all the test tubes will be red, which is the original color of the colloidal gold solution.

General paresis usually gives complete precipitation in the first tube at least and not uncommonly may include the first five to seven, followed by graduations toward the red with the higher dilutions unchanged. Tabes and lues are very similar, but speaking generally the luetic curve is inclined to be narrower, more to the left, and not so high as that of tabes.

In meningitis the peak of curve is almost always to the right of centre or on the extreme right. The most striking difference, however, is that in the syphilitic affections, such as tabes, lues and general paresis, the peak of the curve is to the left of the centre, while in the meningitis group the peak of the test is to the right of the centre.

The Comparative Value of the Gold Test and Other Spinal Fluid Tests.

Throughout the studies of the past two years, careful attention has been given to the comparative value of the colloidal gold and other spinal fluid reactions. Lee and Hinton are of the opinion that the gold test is much more delicate than the spinal fluid Wassermann reaction and for the same reason some have expressed their belief that reactions typical in the "Luetic Zone" confirm the clinical suspicions of central nervous system lues, even though the Wassermann is repeatedly negative; moreover, such reactions may foreshadow the outbreak of a latent lues and may prove quite as valuable as the "Provocative salvarsan reaction." Whenever the colloidal gold reaction is absolutely negative, all other reactions are also negative in the vast majority of cases. There is, however, a close relationship between an increased globulin content and positive colloidal gold reactions. No strong color changes in colloidal gold occur with fluids that give a negative globulin test. On the other hand, positive globulin tests are rarely observed in spinal fluids that give negative or weak gold curves.

Conclusions.

1. As an index of pathological change in the cerebro-spinal fluid, the colloidal gold reaction is more delicate than any other test here employed.

2. Normal spinal fluid usually causes no reduction of the colloidal gold. A slight reduction in any of the dilutions is of no diagnostic import, and may occur in normal spinal fluids.

3. Cases of tabes and cerebro-spinal lues give a typical colloidal gold curve in the luetic zone. Although in tabes the intensity of the curve is usually greater, it is not sufficiently constant to be of diagnostic value between the two conditions.

4. In paresis the colloidal gold test is sufficiently frequent and characteristic to warrant the term, "Paretic Curve," and is of great diagnostic value.

5. In meningitis the colloidal gold curve normally occurs in the higher dilutions and is probably of value in the diagnosis of doubtful cases.

6. The colloidal gold test is more delicate than the Wassermann test. Spinal fluids from luetics have given a colloidal gold luetic curve with a negative Wassermann. However, we have never observed a normal colloidal gold curve with a positive Wassermann in the spinal fluid.

7. No spinal fluid test (except the presence of bacteria) is specific. Every test is simply that much coöperative evidence and should be combined with the history of the case and the clinical findings.

8. The presence of red blood cells or plasma in the spinal fluid often vitiates the result of the test.

9. Since the whole test is based on the interrelationship of the coagulable proteins albumen and globulin the former protecting the colloidal gold, the latter precipitating it, the necessity for accuracy, cleanliness and attention to significant detail is seen in the colloidal gold test in order to secure reliable, consistent and comparable results.

NOTICE TO PHYSICIANS.

It is highly desirable that pathological and etiological studies be made of fatal cases of lethargic encephalitis. Hence the State Department of Health requests that, when feasible, specimens of the brain, and particularly the medulla and pons, and also, when possible, of the spinal cord, be sent promptly to

Division of Laboratories and Research,
New York State Department of Health,
278 Yates Street, Albany, N. Y.

All packages should be distinctly marked "Specimens of Lethargic Encephalitis."

The specimens should be placed in an abundance of ten per cent formalin after small portions of the medulla and pons have been excised and put in a mixture of half glycerine and half water. The formalin specimens are suitable for microscopic, the glycerinated for etiological studies. A letter containing a brief history of the case should also be sent, notifying the laboratory of the forwarding of the specimens, which may be sent express charges collect.

The laboratory is anxious to co-operate with physicians in the collection of these specimens and when *practicable* will send an assistant to be present at autopsies, if the laboratory is notified promptly by telegraph or telephone. The laboratory will defray all telegraphic or telephone charges.

A. B. Wadsworth,
Director of Laboratories.

Medical Society of the State of New York

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Arthur J. Bedell, Chairman, Albany.
Irving W. Voorhees, Secretary, New York.

Pediatrics.

A. Clifford Mercer, Chairman, Syracuse.
Robert Sloan, Secretary, Utica.

Public Health, Hygiene and Sanitation.

Paul B. Brooks, Chairman, Albany.
Arthur D. Jaques, Secretary, Lynbrook.

County Societies

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

Regular Meeting, Albany, N. Y.

Tuesday, March 18, 1919.

The meeting was called to order by the President, Dr. Charles H. Moore, at 8.30 P. M. The Secretary read the minutes of the January meeting, which on motion duly seconded, carried and approved.

The following minutes were read:

A special meeting was called on March 4, 1919, by the Comitia Minora for the purpose of considering the question of compulsory health insurance and other matters pertaining to public health now pending in the Legislature.

Dr. James F. Rooney, M.D., Chairman of the Legislative Committee, Senator Frederick M. Davenport, Assemblyman Clarence F. Welsh, Dr. John M. Andrews, and Dr. James H. Mitchell, of Cohoes, discussed the compulsory health insurance bill.

Dr. Mitchell moved that the Albany County Medical Society go on record as being unanimously opposed to compulsory health insurance in any form. Motion was seconded and carried unanimously.

A vote of thanks was tendered Assemblyman Welsh, Senator Davenport and Dr. Andrews for their response to the invitation extended and their part in the discussion.

On motion duly seconded and carried the minutes were approved.

Dr. Thomas H. Halsted, President of the Medical Society of the State of New York, addressed the Society concerning the unanimous opposition to the compulsory health insurance bill which is being manifested by the various county societies of the state.

Dr. James F. Rooney spoke concerning the amendments to the compulsory health insurance bill.

Dr. James H. Mitchell of Cohoes was elected Vice-President to succeed Dr. Sabin.

Scientific Program.

Dr. Shaw gave an interesting review of his work as Army Intelligence Officer, and told of the many phases of his work regarding the apprehension of propagandists, slackers, and spies, and the results obtained by the friends of the Department, and others, in sustaining the morals of men. Drs. Hinman, Jenkins, Rooney and Halsted discussed the paper. Thirty-six members were present.

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

Regular Meeting, Albany, N. Y., Tuesday, April 8, 1919.

The meeting was called to order by the President, Dr. Charles H. Moore at 8.30 P. M.

The minutes of the last regular meeting were read and approved.

Under the reports of committees, Dr. James F. Rooney spoke concerning the further amendments to the compulsory health insurance bill.

Dr. Arthur G. Root moved that the Society, through its Secretary, send a letter of condolence to the family of the late Dr. Frank Van Fleet. The resolution was adopted.

Scientific Program.

Base Hospital, No. 33, Clinton B. Hawn, M.D.

Field Hospital Work in Europe, Clarence E. Mullens, M.D.

Discussion followed by Drs. J. F. Rooney and N. K. Fromm.

MEDICAL SOCIETY OF THE COUNTY OF MONTGOMERY.

Regular Meeting, Amsterdam, N. Y., Wednesday, April 16, 1919.

The meeting was called to order in the Y. M. C. A. Building, the President, Dr. Raymond J. Knapp, in the chair.

After calling the roll to which eighteen members responded, the Society proceeded to the Scientific Session.

Dr. George F. Comstock of Saratoga Springs was unable to read his paper owing to illness.

Dr. Douglas C. Moriarta of Saratoga Springs gave an interesting paper on "Radium-therapy," which was followed by a general discussion by Drs. Charles Stover, Edward C. La Porte, Richard R. Canna and Alonzo B. Foster.

In the Business Session which followed, Dr. Louis Weigard was elected a new member, and a committee was appointed to draw up suitable resolutions on the death of Dr. Edwin J. Kibbe, formerly superintendent of the Montgomery County Tuberculosis Sanatorium.

The meeting then adjourned for refreshments.

TOMPKINS COUNTY MEDICAL SOCIETY.

Regular Meeting, Ithaca, N. Y.

Wednesday, April 23, 1919.

The meeting was held in two sections.

The first section, from 2 to 5 P. M., was a Tuberculosis Clinic held in Stimson Hall, Cornell University, and the Society was fortunate enough to secure as examiners for this clinic, Dr. John J. Lloyd, Superintendent of the Monroe County Tuberculosis Sanatorium, and Dr. Carl G. Leo-Wolf, of Buffalo.

This being the first clinic of the kind held by the Society considerable effort was made to make it a success from the different viewpoints of the patients, the public and the physicians. The newspapers published several educational articles contributed by various members of the Society who are particularly interested in tuberculosis work, and they also gave liberal notices of the Clinic, treating it as news.

The Society sent notices to every physician in the county, members and non-members alike, inviting them to present suspected cases for examination and diagnosis, especially those cases resulting from the recent epidemic of influenza.

The general result was very satisfactory. There was a large attendance of physicians, nurses, and Cornell medical students, and some forty patients were presented for examination.

While it is recognized that the examination of the suspected tuberculosis case at such a clinic is of necessity incomplete and unsatisfactory to the examiner, it at least gets the patient started in the right direction and has a certain educational value to patient, physician and public.

The second section of the meeting was held at 8.30 P. M., in the rooms of the Board of Commerce, and was rather informal. Drs. Lloyd and Leo-Wolf discussed with the members the methods of diagnosis of pulmonary tuberculosis.

In this method of informal discussions many points were brought out and talked over which might not have been thought of, if formal papers were presented and formal discussions held.

MEDICAL SOCIETY OF THE COUNTY OF RENSSELAER.

Special Meeting, Troy, N. Y.

Tuesday, April 29, 1919.

At the special meeting of the Society those present signed membership in the "Physicians', Dentists', and Nurses' Protective Society of the County of Rensselaer," which was recently formed for the purpose of combating Compulsory Health Insurance, and other vicious legislation inimical to the interests of the medical and allied professions and to the welfare of the people at large. The Society urged that other County Societies take similar action in organizing for protection.

At the same meeting the following resolution was adopted:

Whereas, The Council of the Medical Society of the County of Erie on April 4, 1919, passed certain resolutions as a compromise between the proposed Compulsory Health Insurance and the attitude of the large majority of the medical profession of the State of New York; and

Whereas, The Committee on Health Insurance of the Medical Society of the County of Broome, on April 16, 1919, passed a resolution as follows:

Whereas, All agree that the Health Insurance Bill is a dangerous type of legislation which will work hardship upon the patient as well as upon the physician, let us organize our societies and require our officers to pledge themselves against any such measures. Therefore, be it

Resolved, That the Medical Society of the County of Rensselaer hereby condemn the action of the Comcil of the Medical Society of the County of Erie, and that we hereby commend and adopt the action of the Committee on Health Insurance of the Medical Society of the County of Broome; and be it

Resolved, That a copy of these resolutions be forthwith transmitted to the President of the Medical Society of the State of New York and all officers including the Council thereof, and to the President of each County Society of the State of New York, and be it further

Resolved, That the delegates and alternates of the Medical Society of the County of Rensselaer are hereby instructed to oppose Compulsory Health Insurance and like measures which may come before the House of Delegates of the Medical Society of the State of New York.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

The Anatomy of the Peripheral Nerves. By A. Melville Paterson, M.D., F.R.C.S., Lieut.-Colonel, R.A.M.C., Assistant inspector of Special Military Surgical Hospitals, Professor of Anatomy in the University of Liverpool, Examiner in Anatomy at the Royal College of Surgeons of England. New York and London. Oxford University Press. 1919.

Surgical Aspects of Typhoid and Paratyphoid Fevers. By A. E. Webb-Johnson, D.S.O. Founded on the Hunterian Lecture for 1917. Amplified and Revised. With foreword by Lieut.-General T. H. Goodwin. New York and London. Oxford University Press. 1919.

The Early Treatment of War Wounds. By Colonel H. M. W. Gray, C.B., C.M.G., M.B., Aberdeen, F.R.C.S., Ed. Consultant in Special Military Surgery, late Consultant Surgeon, British Expeditionary Force, France. New York and London. Oxford University Press. 1919.

Lice and Their Menace to Man. By Lieut. LL. Lloyd, R.A.M.C. (T.), Chief Entomologist in Northern Rhodesia. With a Chapter on Trench Fever by Major W. Byam, R.A.M.C. New York and London. Oxford University Press. 1919.

The Oxford Medicine Advance Pages. Edited by Henry A. Christian, and Sir James Mackenzie. Volume I, Part 2. New York and London. Oxford University Press.

Colloids in Biology and Medicine. By Prof. H. Bechhold, Member Royal Institute for Experimental Therapeutics, Frankfort A.M. Authorized translation from the second German Edition, with Notes and Emendations by Jesse G. M. Bullowa, A.B., M.D., Assistant Clinical Professor Medicine, Fordham University; Visiting Physician, Willard Parker Hospital, New York City. 54 Illustrations. D. Van Nostrand Co., New York City. 1919. Price, $5.00 net.

The Whole Truth About Alcohol. By George Elliot Flint. With an introduction by Dr. Abraham Jacobi. Published by the Macmillan Co., New York, 1919. Price, $1.50.

Book Reviews

Principles and Practice of Infant Feeding. By Julius H. Hess, M.D., Major M.R.C., U. S. Army, Professor and Head Department Pediatrics, University Illinois, College of Medicine; Chief Pediatric Staff, Cook County Hospital. Illustrated. Philadelphia, F. A. Davis Co., Pub.; Stanley Phillips, London, 1918. Price, $2.00.

This compact manual on infant feeding is intended for the use of teachers and students in preparation for clinical conferences. The modern theory and practice of infant feeding is presented in a condensed yet quite exhaustive manner. The author enters into great detail in the management and feeding of premature infants. It is to be regretted that in this section of the book only the metric system of weights and measures is given, whereas in other portions the common system is employed. The favorite feeding practice of the author may be summarized as follows:—calculate baby's normal weight, use 1½ ounces of cow's milk per pound of normal body weight at that age. To this add 3 to 5% sugar, either cane-sugar, milk-sugar or dextri-maltose—and after the first month of life 1%

starch. Boil or alkalinize the mixture, if there is any difficulty with the curd. The following checks on the adequacy and compatibility of any particular formula are employed:—the caloric value, and the percentage and quantities of fat, protein and sugar in the mixture. Cane-sugar is used most frequently, while milk sugar is given when there is a tendency to constipation. The author adopts the Finkelstein classification of the nutritional disturbances of infancy. Only meagre details are given of the most recent work on acidosis in infancy. This manual presents in convenient form a reliable guide on the principles and practice of modern infant feeding. S. FELDSTEIN.

ORGANISM AND ENVIRONMENT AS ILLUSTRATED BY THE PHYSIOLOGY OF BREATHING. By JOHN SCOTT HALDANE, M.D., LL.D., F.R.S., Fellow of New College, Oxford. New Haven, Yale University Press, London, Humphrey Milford, Oxford University Press, 1917. 138 pp. $1.25.

Prof. Haldane has added a useful volume to the Silliman Memorial. The fund was established "to illustrate the presence and providence, the wisdom and goodness of God as manifested in the natural and moral world." The writer concludes that their correlation is in the general consciousness of the whole content of individualistic knowledge. None of the natural sciences proves the existence of God, nor are the moral independent of the physical (p. 117).

The author's thought is that life is not physics or chemistry, neither bio-physical nor bio-chemical—but is a primary reality, not a mere artifact (p. 100). He interprets the phenomena of respiration as integral manifestations of the whole life of the organism. First in a study of the physiology of the co-ordinated reactions between organism and environment; then an investigation of the gaseous content of the blood under various conditions; further in a chapter on the regulation of the internal and external environment, referring by these terms to the blood as the internal and its disturbances with those of the functioning organs as external. He concludes, in the fourth chapter that the philosophic concept of life is based upon biologic postulates, the most important of which is concerned with the fundamental needs of the organism for oxygen, as supplied through the respiratory apparatus, in the maintenance of metabolism. A. F. E.

HOW TO ENLIGHTEN OUR CHILDREN. A Book for Parents. By MARY SCHARLIEB, M.D., M.S. New York, Fleming H. Revell Company, 1918. Cloth, $1.00.

In the truest sense this is "A Book For Parents." It is filled only with essentials. The facts therein contained are the answers to the troublesome questions which arise, tantalizing, in those vague intangible forms, in the minds of parents. It gives admirably the information to the parents rather than the "How"— that is, the method of procedure in imparting this information to their children, on that account therefore we take exception to the title as being a bit misleading.

Probably too, as in other books dealing with sex information to the young, too much stress is laid on instructing the child in keeping this information a secret, "a great secret, a secret beween you and me and God." It is rather more likely to impress the child with a feeling that he or she alone is possessed of an awe inspiring and momentous knowledge than giving them a feeling which the book as a whole is desirous of imparting, namely, a wholesome knowledge of a heretofore difficult subject because treated in a misleading manner, now in a "perfectly calm, matter-of-fact" natural manner.

Although not technical it gives all the medical knowledge bearing on the subject—anatomical and physiological—in full, in a most lucid manner.

It is a book of reference for the parents and is written in an easy style; one which gives the desired information quickly and tellingly.

This small volume should be read and re-read many times by most grown-ups who have the responsibility of caring for children. E. A. B.

THE HUMAN SKELETON, AN INTERPRETATION. By HERBERT EUGENE WALTER, Associate Professor Biology, Brown University. 214 pages, 175 illustrations. 12mo. New York: Macmillan Co., 1918. Cloth, $1.75.

The motif of this entertaining brochure is stated by the author to be in the frontispiece. This skeletonized group of a material Bucephalus and Alexander is supposed to represent the beauty of a great spiritual story from ancient times; and the reader of the book is supposed to become entranced with the hard innards of his own body by contemplating comparative osteology and recognizing the developmental niceties of mechanical properties. To accomplish this, acquaintance with one's own skeleton as a matter of intellectual delight and satisfaction the author has recourse to the use of many word-pictures. So we read of the "bizarre" giraffe, the skeletal "grillwork," the "parasitic" fetus, an anatomical "scrap heap," a bony "halo," external skeletal "trimmings," the "anthropology" of hair, a "hoof-like" shoe, the "makeshift" foot, et al. Certainly the imagination of a lay reader is agitated by such unscientific language, and mayhap will produce a mental picture of his idealized bony structure which would enable him to contemplate the "body lying mouldering in the grave" with some degree of appreciation of its former serviceableness; but Gray did not prefix "Walter" to his illustrious though dreaded name, and the student who wants to become an osteopath—as an occasional indiscreet surgeon sometimes sighs to be—will hardly find pabulum even for a lunch. To those who need not concern themselves with the exactness of their knowledge of their inner, osseous, skin this turning of their body inside out for their delectation and profit will be an hour's entertaining diversion. Since all good things are said to be three, some of us will wonder why the professor did not add a third quotation to the two which he makes from the Bible: the first four words of Genesis would have been far more appropriate. A. F. E.

HEALTH AND THE WOMAN MOVEMENT. By CLELIA DUEL MOSHER, A.M., M.D., Medical Adviser of Women, Leland Stanford Junior University. Second revised edition. The Woman's Press, New York City, 1918. Price, 60c.

In a valuable address on "Health and the Woman Movement," Dr. Clelia Duel Mosher, Medical Adviser to Women, Leland Stanford Junior University, has shown conclusively that there is not the structural difference between men and women which should make the latter physically less efficient than the former.

Her contention has been made at the psychological moment, for the work women have done throughout the world during the late dreadful war, proves its truth almost without further argument.

She makes a judicial examination of the traditional handicaps of women in the light of scientific investigation, and finds that most such beliefs were unwarranted. The function of menstruation stands out the longest among woman's handicaps, but even this, Dr. Mosher declares, is not necessarily a handicap in healthy women as has also been proved by the constant, laborious, and efficient achievements of the great army of women, who have done men's work from munition plants all the way to the front of the battle lines during these four years of war.

Dr. Mosher goes into the causes of painful menstruation, and shows conclusively that most of the causes are removable. She says: "The painful menstruation so commonly observed is in the larger number of cases, congestive in type." She has made an extensive study of blood pressure during menstruation as compared with it at other times, and has found that, while the *general* blood pressure is lowered somewhat, the *local* blood pressure in the pelvic organs is elevated and is relieved by menstrual hemorrhage. "This periodic physiologic congestion is frequently so excessive that it produces pain." The upright position, lax abdominal muscles, costal instead of abdominal breathing, and constriction of the body by clothing which interferes with the use of the abdominal muscles and diaphragm, all combine to develop and promote this excessive pelvic congestion.

Now, comes the most important teaching in her paper—her method of prevention and correction, the value of which has been proved by hundreds of girls and women not only under Dr. Mosher's observation but also under that of other medical women. Add to these exercises the "Yawn breath," advocated by Dr. Eliza Mosher, which carries all the abdominal viscera upward and off the pelvic organs, at the same time rapidly pumping venous blood back to the heart, and we have both a preventive and a corrective for painful menstruation of proved value.

Dr. Mosher's explanation of the results obtained seems tenable and her theory that prolonged menstruation—that which continues over three or four days—is a true hemorrhage, is worthy of attention.

Taken as a whole this little brochure on "Health and the Woman Movement" is a most original and valuable contribution upon a subject of vital importance not only to girls and women but also to the future welfare and efficiency of the race.

An Introduction to Neurology. By C. Judson Herrick, Ph.D., Professor Neurology, University of Chicago. Second edition, reset. 12mo. 394 pages, 140 illustrations. Philadelphia and London: W. B. Saunders Co., 1918. Cloth, $2 net.

This excellent work, dealing with the underlying principles of neurology, is the best of its kind that the reviewer has seen. It is not an easy book to read; it is extremely technical, with an infinite amount of detail, but the author is so logical in the treatment of his subject, and approaches it with such a scientific insight, that it is a constant joy to the reader.

The material has been arranged in three groups, the first eight chapters dealing with the more general neurological topics such as the neuron, reflexes sensation and the general physiology of the nervous system; in the development of these themes, there is shown a broad knowledge of embryology and comparative anatomy. The next ten chapters deal with the gross and minute anatomy of the cerebro-spinal system and their functional significance, while the remaining chapters are devoted to the cerebral cortex and its functions. At the end of each chapter, is a summary of its contents, together with an excellent bibliography. The index is unusually complete, and has evidently been prepared with great care. F. C. E.

Radio-Diagnosis of Pleuro-Pulmonary Affections. By F. Barjon. Translated by James A. Honeij, M.D., Assistant Professor Medicine in charge of Radiography, Yale Medical School. Published by New Haven Yale University Press, 1918. Price, $2.50.

This is a work which should appeal to the clinician as well as the roentgenologist, for it is a conservative exposition of the value of the Roentgen rays in the diagnosis of diseases of the pleura and lungs.

The author emphasizes the necessity of co-operation between the Clinician and the Roentgenologist in this work, and also the importance of a good clinical history before the interpretation of the Roentgenological findings is attempted. He also points out how necessary it is that the interpretation be made by a physician who alone is capable of rendering an opinion and reconciling the clinical history and Roentgenological findings.

Part I is devoted to a discussion of the methods of examination. The fluoroscopic screen examination is very fully discussed, but we feel that the author does not sufficiently emphasize the stereoscopic plate method, without which, any examination of the lungs is incomplete.

In Part II affections of the pleura, including pneumothorax, are considered. These chapters are by far the best in the book and the subject is treated in a most comprehensive and illuminating manner. In Part III affections of the bronchi, including foreign bodies, are treated briefly.

Part IV treats of pulmonary lesions, including acute infections, tuberculosis and lung tumors. The author classifies tuberculosis in three groups, namely: those in which no physical signs are present, but there is suspicion of the disease; those in which there are physical signs and clinical evidence of active disease, and chronic cases with advanced lesions. The author's discussion of the first group is not altogether satisfactory, but the last two groups are very fully and satisfactorily covered.

The last part deals with penetrating wounds of the chest and their complications and is based on a large amount of military material.

The illustrations are good, as a rule, and the typography is excellent. We believe this book should appeal to all those who wish to familiarize themselves with the possibilities of this method of diagnosis in lesions of the lungs and pleura. J. G. W.

The Hearts of Man. By R. M. Wilson, M.D., Late Assistant to Sir James Mackenzie, under the Medical Research Committee. Published by Henry Frowde, Hodder & Stoughton, Oxford University Press, Warwick Square, E. C. (American Branch, New York City), 1918.

This is rather an unusual work and one which, although small, is full of original work and suggestions.

It is largely given up to the consideration of the effects of reaction or effort breathing of the pulse and circulation and also of the meaning and effect upon the general circulation of the so-called great *"blood lakes"* of the skin, abdomen and lungs. The author was formerly the assistant of Sir James Mackenzie, whose criticisms are freely and frankly printed and answered.

The rather theoretical and technical nature of this publication would seem to make it appeal more to the internist than to the average general practitioner, although even the casual reader cannot fail to be impressed by the originality and strength of the statements and convictions expressed therein.

The illustrations are entirely diagrammatic and consists largely of polygraph tracings.

W. H. Donnelly.

Deaths

Wallace Clarke, M.D., Utica, died March 16, 1919.

Floyd S. Crego, M.D., Buffalo, died April 23, 1919.

Lyman H. Hills, M.D., Binghamton, died March 21, 1919.

Edward M. Hyland, M.D., Utica, died April 11, 1919.

Edwin J. Kibbe, M.D., Amsterdam, died March 29, 1919.

Calvin Sloan May, M.D., New York City, died April 27, 1919.

Joseph Merzbach, M.D., Brooklyn, died April 29, 1919.

Thomas H. Orser, M.D., Cold Brook, died April 20, 1919.

Jefferson Scales, M.D., Tompkinsville, died April 14, 1919.

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

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Vol. XIX. JUNE, 1919 No. 6

EDITORIAL DEPARTMENT

THE SPECIAL MEETING OF THE HOUSE OF DELEGATES

It is doubtful if the medical profession has ever before been confronted with so many new, difficult, and important problems as have been forced upon it today. In this our profession is not alone. We are in a transition stage from the old order to new and grave conditions. Never before has there been greater need of conscientious study of conditions and calm judgment in meeting them. The good old past is gone. The present is here, and it is for us of 1919 to solve many difficult problems. The manner in which we meet them will settle in a large measure the future of our profession. Shall our sons and grandsons look back on the era following the Great War and say: "Those were great days; our fathers were great and wise men," or shall they be obliged to say, "Our fathers were fools"? The answer to these questions rests in large measure on what we of the State Medical Society shall do during the next few months. It is for us to work out our own salvation as best we may and leave an adequate heritage to our children.

Some of the most difficult of problems are before us for solution. It behooves us, therefore, to enter upon their study with open and unprejudiced minds. We should study them personally without bias or the influence of others. We are educated men and women, and each should draw his own conclusions after conscientious study of the facts, as a juror must render his own verdict after weighing the evidence placed before him. We should not be governed by ready-made opinions furnished by others.

The last House of Delegates labored through three long and strenuous sessions and disposed of many matters of vital and immediate importance. Two questions of paramount importance were presented and discussed. The time was not opportune, however, for their final settlement. A decision in May was impossible.

One of these questions, the formation of a Bureau for Legislative Information, was new. The other, Compulsory Health Insurance, was by no means new. It was deemed wise by the House of Delegates, therefore, to take the unprecedented course of calling a special meeting to consider these subjects without the distraction of any other question. A special meeting was ordered to be convened in the autumn, the exact date to be determined by President Madill. The date selected will probably be in November after election. The political complexion of the Legislature will then be known as well as the individual members.

This action lays a responsibility upon every member of the Society and an added responsibility upon the Delegates. It forms a referendum of most satisfactory form. Owing to its large membership and distribution through fifty-nine constituent societies of a great State, a representative form of government is imperative. We have now, through this special meeting, an opportunity for every member to be heard through his chosen representatives. It is incumbent upon every member of the Society, therefore, to study these two questions and inform his representatives of his desires. A real referendum may thus be obtained such as has not before been possible.

When a decision has thus been reached by fair and universal expression of opinion, it should be loyally accepted as the voice of the Society.

Two subjects will be brought before the meeting in the fall: The Formation of a Bureau for Legislative Information and the question of Compulsory Health Insurance. The principle of a Bureau for Legislative Information has received almost universal approval. The points for consideration will be the form to be adopted. Dr. Rooney has presented a scheme (page 209) which would establish a limited bureau in Albany. Dr. Kosmak in his report (page 228) has presented a more extensive and comprehensive scheme. It is for the fall meeting of the House of Delegates to decide whether either of these plans be accepted as presented, or whether a comprehensive plan based upon the good points of each be formulated.

The second duty will be to reach some conclusion upon the subject of Compulsory Health Insurance. No other subject since that of the Code of Medical Ethics, of more than thirty years ago, has aroused so much interest or generated such diverse opinions and intense feeling. An opportunity is now given to discuss the whole question and ascertain the real feeling of the Society. It is, therefore, incumbent upon the whole membership to enter upon a careful study of this difficult question.

A complex public health problem of profound importance is before us and before the people. We cannot run away from it or side-step it. We must face it squarely and reach some conclusion as to the attitude we should assume. It is certain that this idea was in the minds of the Delegates when they ordered a special meeting in the autumn.

In considering this problem at that meeting two fundamental ideas will surely be presented as to the attitude of the State Medical Society before the Legislature next winter:

1. Shall it adopt an attitude of blank opposition to all Compulsory Health Insurance without attempting to change or amend any bill that may be presented?

2. Shall it adopt an attitude of opposition but at the same time seek to gain amendments or modifications in the event that a bill is enacted into law in spite of us, in the hope of conserving the interests of the medical profession, and at the same time of protecting the public against inadequate medical service.

We are in one of the most remarkable transition periods in human history. "Old things are passed away. Behold, all things are become new." These are the first of many new problems which we must face and endeavor to solve. It is for us to study the problems now before us, that we may act calmly and wisely, not alone for ourselves, but for those who are to follow us.

F. M. C.

VICTORY MEETINGS

A notable feature of the Medical Society meetings of this season has been that they were mostly organized as Victory Meetings. This was proper and commendable. It is very desirable that medical men just home from military service should record their experiences while fresh in mind, and place them in enduring form as papers and discussions. This feature appeared in striking form at the Syracuse meeting of our own Society. Many of the papers read in the sections and symposia will be recorded in future years as classics. As yet the medical and surgical history of the Great War is fragmentary, like the issues of a daily newspaper. In a few years it will be written in a broad and comprehensive form by men with a genius for such work. It is for the men of today to simply record their own experiences, and express opinions as to the value or futility of the various medical and surgical devices adopted.

The medical history of the American Civil War was written in masterly manner, and for a half century has proved of profound value. There are certainly men in our own country, as well as in other nations, capable of producing literature of this character.

It is to be hoped that some concerted action may be taken by the medical profession of the countries engaged in the war to produce a comprehensive medical history of these marvelous years.

The invitation by the American Medical Association, extended through the courtesy of the United States Government to all the Allied Nations, to send medical delegates to the Annual Convention at Atlantic City and the reception of these delegates will long be regarded as a notable event in American medical history.

Attention is called to the notice, appearing on another page of this issue, of the Medical Veterans of the World War. A communication regarding it has been received from Dr. Alexander R. Craig, Secretary of the American Medical Association. Dr. Hubert Work, speaker of the House of Delegates of that Association, is the temporary President. It is clear, therefore, that this Society of Medical Veterans of the World War has been instituted under the auspices of the American Medical Association.

Medical Society of the State of New York

One Hundred and Thirteenth Annual Meeting.

The one hundred and thirteenth annual meeting was called to order by the President, Dr. Halsted, Tuesday, May 6, 1919, at 8 P. M., in the Auditorium of the First Baptist Church.

Prayer was offered by Rev. Dr. MacInnis.

The minutes of the one hundred and twelfth annual meeting were accepted as printed in the STATE JOURNAL OF MEDICINE, June, 1918.

Dr. Dwight H. Murray, Chairman of the Committee on Arrangements heartily welcomed the Society to Syracuse and announced the entertainments and places of meeting.

An organ recital was given by Prof. Charles M. Courboin.

Hon. Walter R. Stone, Mayor of the City of Syracuse, delivered the following address of welcome:

"When Dr. Halsted told me that there was a possibility of your Society coming to Syracuse, it struck me as a very proud day for us. I was impressed with the great amount of good that our city would get from such a gathering, from the interchange of ideas and the exchange of scientific knowledge which will be brought to bear in discussing the important things of life.

Officially, as well as personally, I extend to you a hearty welcome to the City of Syracuse, I hope the results of this meeting will be more than worth while. I hope you will find your way to this city again in the near future. We are proud of the men of your profession. They stand at the top of our list of good citizens. They give unstintingly of their time and talents, and it has been my pleasure on many occasions to call on them for their services in civic ways and I have never found them wanting.

We have been greatly impressed with the importance of health work in our city. Recently, throught the efforts of some of our physicians backed by the Academy of Medicine and the physicians generally we have established a Department of Health instead of having it as a bureau in connection with the Department of Public Safety. This is a long step in advance in a city of the second class. The first class three larger cities have already reached that point and Syracuse has reached a size in population and territory when it is necessary to establish such a Department of Health.

Again, I extend to you a hearty welcome and the freedom of our city.

Dr. Halsted delivered the President's Address.

Dr. George E. Vincent, President, Rockefeller Foundation, delivered the Annual Oration, "The Doctor and the Changing Order."

FLOYD M. CRANDALL, *Secretary*.

PRESIDENT'S ADDRESS*

By THOMAS H. HALSTED, M.D., F.A.C.S.,

SYRACUSE, N. Y.

SYRACUSE and the Medical Profession of Onondaga County are deeply appreciative of the honor of entertaining the Medical Society of the State of New York, this being the first time in its history of 113 years that this privilege has been afforded. It was largely through the activity of a former Syracuse President, the late Dr. Henry L. Elsner, a man greatly respected in this city, that the ancient breach in the profession of New York State, was closed, and an amalgamation of the old Medical Association and the former Medical Society was brought about, giving us a harmonious Medical Profession of this State.

At the time of the signing of the Armistice 30,591 or 37 per cent of the effective and active practitioners of this country had given up their private practice, had left their homes and were in war service, 14,053 in foreign service; 16,538 in camps in the United States preparing to go overseas. In addition to these, 21,616 doctors were serving on medical examining and advisory boards, giving voluntarily many hours daily or weekly to the important service of selecting and classifying the drafted men. If our army had become double its size, as it would have, had the war continued another year, there would have been left at home to take care of the civilian population less than a third the usual number of doctors. The condition would have approached but not reached, that existing in England and France during the last year of the war. There were in England caring for the civilians of the cities and country, a tenth of the usual number. In that country those doing this home work, were either above 60 years of age or physically unable to stand the strain of military life. In France the situation was even worse.

Has the medical profession of the world stood the test of efficiency in service, when the great opportunity came to prove its worth in saving lives, shortening sickness, alleviating suffering, preserving limbs, returning the soldier to his home in as good condition physically as the ravages of shell, bullet, bayonet, mental strain and infectious disease would permit?

Contrary to what is perhaps generally believed, the mortality from battle casualties in this war has not been greater than that of previous wars, *i. e.*, the ratio of men engaged in battle to those killed and dead from their wounds.

Modern warfare has been ruthless beyond anything hitherto known. The character of the wounds was more deadly than that of any previous war. Practically every wound received on the western front was infected with tetanus or streptococcus and many with the organism of gas gangrene, bacillus welchii. As Dr. W. W. Keene recently observed, so impregnated with these germs was the soil of Belgium and Northern France, that one grain of the soil of this battle-stricken country, if inoculated into a healthy animal, would produce tetanus. The clothing of the men carried the streptococcus into the wounds. The result was that all wounds were infected with the most virulent of all organisms.

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* Read at the 113th Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 6, 1919.

Before the war began, an anti-toxin against tetanus had been discovered and in civil life had been proven effective if employed sufficiently early. Tetanus antitoxin was injected into every wounded soldier as the first thing done in his treatment, with the result that tetanus became an almost negligible cause of death on the western front. Hundreds of thousands of wounded were saved from a horrible death by this one medical discovery.

The other great cause of death of the wounded soldier, is sepsis, due to the streptococcus. Unfortunately so simple a procedure as a hypodermic injection of a vaccine, serum or an antitoxin, does not answer in this case. The wounded were dying of sepsis in appalling numbers until a surgical technique, debridement, was perfected, largely through the efforts of the French surgeon, LeMaitre, who demonstrated that by cutting away freely within eighteen to twenty-four hours the dead and infected tissue, taking away, at the same time, the mass of streptococci infecting the wound, the wound could, with safety, be sewed up and primary healing would result, saving, not only the patient's life, but shortening the lingering healing of the septic wound by many weeks.

The discovery of Dakin of the value of a solution of hypochlorite of soda for the killing of this organism of sepsis, while, at the same time not damaging the living cells, and Carrell's genius in devising the means of using Dakin's solution, marked another great advance in the treament of septic wounds. Debridement, and the Carrell-Dakin method, employed together or separately, won the battle of medical science against sepsis, provided the wounded were brought out of the shell holes and "No Man's Land" in time. Those who were not killed outright, died largely because the ruthlessness of warfare kept them too long beyond the reach of the stretcher bearer.

It was only toward the end of the war that a serum was discovered which was specific and effective against that horrible complication of deeply infected wounds, gas gangrene. This coming late, not so many lives were saved, as were from tetanus and sepsis.

The marvellous advance in lung, brain, abdominal and joint surgery, made possible largely through the X-Ray, saved thousands of lives of the wounded which would have been hopeless in any previous war.

The wonderful surgery of the genius Morestin, who literally worked himself to death in Paris, dying a few weeks ago at the age of 46, and of other surgeons skilled in plastic surgery of the face, saved from a living hell any number of the victims of these most frightfully disfiguring of all war wounds. The transplantation of living tissue by Carrell, and the still more advanced work by Nageotte and Sencert, whereby dead, but sterile connective tissue, nerve, artery, tendon, etc., was transplanted successfully from animal to the human subject, opened a field of surgery, the end of which almost staggers the imagination.

That the percentage of deaths from battle casualties was not greater than it was, is not because man had not devised sufficiently terrible death dealing instruments and methods, nor alone because the military means of defense were of such superior character, but largely and chiefly because medical science in the large sense, salvaged the wounded, and saved them to their countries.

More than eighteen million wounded soldiers survived their wounds. How many millions of these eighteen are alive today, who would not have been, but for the combined victory of the surgeon and the medical laboratory and research worker, no one can say, but without doubt, when the surgical history of the war is written, it will be shown that there were many millions saved from death from tetanus and sepsis alone by these measures.

It is probably no exaggeration to say that the new surgery employed in the treatment of the wounded reduced the numbers of those who would have died, under the conditions of any previous war, by seven million and three-quarters, the estimated number of soldiers who lost their lives in this war.

We have thus far considered only the saving, by surgery, of those who were wounded, and the class of cases, which under surgical care in former war conditions, would have died.

Until this war, the great mortality among the soldiers of all nations has not come through the actual fighting and exposure of battle, but from disease among those behind the firing line, in camps.

In the war of the Rebellion, 1861 to 1865, the Federal volunteer and regular armies of the United States lost 110,070 killed in action and died from wounds while 240,000 died from diseases, *i. e.*, of the deaths, about 35 per cent were from battle casualties, 65 per cent from disease, such as typhoid fever, pneumonia, dysentery, etc., in the "Union Army."

In the South African war, 1899-1902, thirty-seven years later, and less than twenty years ago, the deaths in the British Army from disease were about the same, viz., 35 per cent from battle casualties, 65 per cent from disease. Following the Boer war, there began a great change in the causes of death in the subsequent wars, which can be almost entirely credited to the advances made in scientific medicine.

In the Russo-Japanese War, 1904-1905, fifteen years ago, the deaths in the two armies were, approximately, 65 per cent from battle casualties, 35 per cent from disease, a complete reversal of former ratios. It is interesting to note, also, that the Japanese, more advanced medically than the Russians, lost only 31 per cent of their dead soldiers from disease, while the Russians lost 40 per cent.

The Canadian Army, in this war, lost of its dead soldiers 94 per cent from battle casualties and less than 6 per cent from disease, a marvellous showing, reflecting credit alike on the bravery of its fighting men, and on the skill of its medical corps.

Of the A. E. F. in France, 67.5 per cent died from battle casualties, 32.5 per cent from disease, the majority of the latter being from the "flu" epidemic, giving a much higher percentage mortality from diseases than would have been the case had the war continued another year. There is no reason why the figures would not have been nearer those of the Canadian Army, had the Armistice been postponed one or two years.

Let us for a moment consider what the situation would have been, had medical science in the period since the Boer War, not discovered the cause and means of preventing or successfully treating those epidemic, infectious and germ producing diseases which in previous wars caused more deaths among soldiers in the camps behind the firing line than were killed as a result of fighting in battles.

In the Spanish-American War, lasting sixteen and one-half weeks, 21,000 of our army of 227,494 men contracted typhoid fever; *i. e.*, one man out of five, or 20 per cent. Typhoid fever caused 86 per cent of the total deaths of that war.

In the present war, during the period from December 7, 1917, to April 5, 1918, twenty-one weeks, of one million of our recruits who had been vaccinated against the disease, but ten cases of typhoid developed, *i. e.*, one in a hundred thousand soldiers.

In the British Army of 5,000,000 men during the first two and one-quarter years but 4,571 cases occurred, less than one-tenth of one per cent, instead of one million cases, or 200 times as many as might have been expected under Spanish-American War conditions.

Nearly sixty million men, the pick of the manhood of the world, were mobilized by the various belligerents of this war. In a war of trench warfare, No Man's Land, shell holes, polluted poisoned water, typhoid fever and cholera would have found the most favorable elements for their developments, and would, in all probability, have caused alone more sickness, mortality and demoralization of morale of the various armies, than all other casualties combined. As a matter of fact, both typhoid fever and cholera were almost negligible factors, simply because of the successful use of vaccination against these diseases, added to the efficiency of the Sanitary Department in its protection of the drinking water.

The investigation by research workers, and the final discovery and proof by the Medical Research Committee of the American Red Cross of the true cause and mode of transmission of the infective agent of trench fever, was one of the greatest medical benefits afforded the Allied armies, because, in this war, trench fever caused more morbidity than any other disease. While of a low mortality, this fever reduced the man power of the armies enormously, causing as much as 45 per cent of hospital evacuations and 60 per cent of all cases of sickness in one army, and being comparable to such plagues as typhus fever, typhoid and malaria. The discovery that the infective agent was transmitted through the cootie, made the prevention of the disease the comparatively simple one of the destruction of this pestiferous host, the same problem as the prevention and eradication of yellow fever and malaria, the destruction of the cootie in the one case, of the mosquito in the other two. The disease was rapidly being mastered at the time of the signing of the Armistice, greatly to the gain of man power in the armies, and to the popularization of Medical Research throughout the whole personnel of the army, from commanding general to humble private, and in quarters where medical research had never been heard of previously.

Another of the most serious causes of hospitalization, and consequent reduction of man power in all armies, has in previous wars arisen from venereal disease. So efficient was the prophylaxis against these maladies, that in the American army, these diseases prevailed to a much lesser extent than in civil life, being less than 1 per cent in our army.

Many other triumphs of medical science might be enumerated, but enough has been said to show that without question the medical profession of the world, through medical research laboratories, surgical skill, sanitary science and high grade medical personnel, coupled together and operating under marvellous organization, saved from what would have been certain death in any previous war, more wounded and sick soldiers than were killed in battle or died from their wounds and their diseases.

Seven million, eight hundred thousand soldiers is a low estimate of the number of those who died fighting for their countries. This takes no account of the enormous mortality of the civilians of those stricken lands, Serbia, Poland, Armenia, Russia and others where starvation, epidemics and ruthless barbarity killed the non-fighting people as though they were flies.

It requires little imagination to believe that ten million people, chiefly the best youth of the world, are alive today, who would have been buried in trenches in Europe, but for the scientific progress in medical, surgical and sanitary science of the past twenty-five years as applied in this war.

National Department of Health.

The most valuable asset of any nation is its people. Monsieur Barriol, a celebrated actuary, estimates the average capital value of a man in the six countries of the United States, Great Britain, France, Germany, Russia and Austria, to be $2,892. On this basis $28,920,000,000 worth of human lives have been saved out of the wreck of the war by the late developments of medical science alone, a saving to the world almost equal to the total cost of the war to France or Great Britain and of three-fourths that expended by Germany.

The United States Government insured the lives of its soldiers up to $10,000 each. M. Barriol estimates the capital value of a man in the United States as being $4,100. It is, then, certainly fair to estimate the average value of every human life in this nation at not less than $1,000. Consequently this country has $100,000,000,000 worth of human lives among its various assets. The total national wealth of the United States, exclusive of its human lives, was in 1912, $187,000,000,000. The total value of its live stock was six and a quarter billion. The total value of all real property, taxed and exempt, was $110,000,000,000, about the same as that of the monetary value of its people.

The mere statement of these facts is sufficient to prove the wisdom and economic sense of taking every precaution to care for the welfare of this most valuable of all the sources of national wealth, human life. Yet, except in time of war when the human unit is so essential, the nation takes, as a Government, comparatively little interest in this item of its wealth. It would seem clear that one of the first results of the coming readjustment in National Government would be the addition to the great departments of a Department of Health, presided over by a great executive, a Secretary of Health, with a seat in the Cabinet of the President. The duties of such a Secretary would be, in a large way, to co-ordinate in it the various interests that are now scattered and supervise national medical education, promote scientific medical and animal research and investigation, guard the country against the ingress and spread of epidemic diseases, doing those things that would tend to preserve the health, prolong life, prevent disease and decay, safeguard child welfare, promote the productive efficiency as well as happiness of the individuals constituting this valuable national human asset. The importance of such a Secretary would be as great as that of the Secretary of State, of War, of the Treasury, and much greater than that of Labor, Agriculture and Commerce, the latest additions to the Cabinet. This war has taught England how great the value of such a Minister would be, with the result that she is now adding such a portfolio to her Cabinet.

Medical Education.

It might be thought that the excellent work of American physicians in this war, is such that the medical profession should be content with the character and quality of medical education of this country, but it is not satisfied. It knows that the wonderful showing of scientific medicine is the result of organization, of the cooperation of the brainiest men in medicine, surgery, medical research and laboratory, of unlimited money permitting the doing of big things by big men in a big way, and the utilization of the knowledge of the medical and sanitary corps of all the Allies. Wonderful things have been accomplished but greater things remain to be done. When a single epidemic can, in a period of three or four months, sweep over the face of the civilized earth, leaving in its wake a record of at least six million deaths, more than were killed in battle in four years or more of frightful warfare, it is evidence that medicine has much to learn, and the quality of its workers must be of the highest grade if it would truly fulfil its advanced mission in the new world just beginning.

There must be a better system and there should be a standardization of medical education throughout the United States. Medical education is undergoing a progressive evolution in this country, a steady improvement on the whole, thanks chiefly to the work of Abram Flexner on behalf of the Carnegie Foundation, and to the Council of Medical Education of the A. M. A. The greatest improvement, perhaps, is in those States where the State itself makes medicine a part of its general educational and University System, as in many of the progressive Western States, like Wisconsin, Minnesota and Iowa, the least improvement in those States, chiefly in the South, where the interest of the States in medical education and medical standards is very slight and perfunctory. Until there is standardization there cannot be reciprocal exchange of license and privilege to practice among the States as there should be.

The interest of two great men of business and wealth, Carnegie and Rockefeller, have given a stimulus to medical progress that has done more for scientific medical advance than all other causes in this country combined. Many of the great universities recognize the importance of their medical colleges and are endeavoring to procure large bequests and big endowments for them.

However, even the best of the medical colleges with university affiliation in the United States are only partly university in their conduct, being managed partly on the system that prevailed when these schools were proprietary and owned by the faculty that taught in them. The first half of a medical student's course is spent in the so-called scientific branches, anatomy, physiology, chemistry, bacteriology, pathology, laboratory subjects taught by full time professional teachers, trained pedagogues, men who are specialists in their line, devoting their whole time to the work, engaging in no outside pursuits or private practice. The work and the result are satisfactory alike to the students, the teachers and the subjects taught, limitation only being on the amount of money put into the equipment and the number and quality of the teachers. It is in these subjects and by these men that the marvellous advances in scientific medicine have occurred, and it is to them most largely that the huge saving in life in the present war, is more or less directly due.

It is in the latter half of the medical course that failure in medical teaching is most apparent. This is because of the system of volunteers and unsalaried teaching in the clinical subjects by men—actively engaged in practice, and selected, not always with regard to their peculiar fitness and qualification for the chair. The service being voluntary and unremunerative, compensation is in the nature of prestige and paid for in advance at the time the appointment is made. A successful medical practitioner is a busy man, and if he holds a clinical teaching position in a medical college, has necessarily much time consuming hospital or dispensary work to do, much time is demanded in attendance on faculty, hospital, dispensary and committee meetings of one kind or another, with the result that he is driven and overworked. Being human, he is likely to forget his duty to the student, too often neglecting his college work for the seemingly more pressing demands of private practice, upon which he and his family depend for a living.

This volunteer system is seemingly a good way of procuring clinical teaching by medical colleges and universities for nothing, but it is highly expensive for the student and the public, because the best service is neither given nor received. No sympathy need be wasted on the unsalaried physician professor because he can resign. The student cannot.

Now, this system is absolutely wrong. It is time for the medical profession to cease carrying the burden which has become too great for it with all the modern advances and requirements.

The clinical half of the Medical Course should be put on a university basis, like the first half, and when that is done there will be as great progress made in clinical medicine as has been made in laboratory medicine. The hospital would become the clinical laboratory. The teachers would be chosen because of their special qualifications, and would devote preferably their whole time, or at least a definite part of it to this duty, their primary one, and for which they would receive adequate financial compensation. If their work were unsatisfactory or inefficient, they would be displaced, if noteworthy and brilliant, their reward would come in being called to a more responsible and more remunerative position in perhaps a larger college.

There would be no difficulty in finding the highest grade of clinician, the best qualified physicians, to accept these positions at incomes a half or a quarter of that received from their private practice. As in France, there should be but one standard of medical education, the highest, a medical degree should permit the holder of it to practice in any State in the Union, the education itself should be given in State universities, or in universities possessing endowments sufficient to give medical education equivalent to that given by the State. Men of wealth should be encouraged to study the great benefits to humanity that would follow the establishment of a high grade of medical college with its necessary hospital, dispensary, laboratory and research equipment. It is within the truth to say that no man in this country or perhaps in the world has ever seen in his own lifetime such reward for money well invested as John D. Rockefeller, who, through the scientific labors of medical scientists in the Rockefeller Institute in New York, has made possible such discoveries in the causation and treatment of disease, that literally millions of men throughout the world owe their lives or their health to investigations conducted in that Medical Research Laboratory.

There is one Rockefeller Institute in the United States. There should be an institution of similar nature and character in connection with every medical college in this country, and there will be when the public appreciates what such an institution means for them, and demands that the nation itself or well endowed universities provide real medical education.

HOUSE OF DELEGATES.

The Regular Annual Meeting of the House of Delegates of the Medical Society of the State of New York was held in the Ball Room of the Onondaga Hotel, Syracuse, Monday, May 5, 1919, at 3:45 P. M., Dr. Thomas H. Halsted, Syracuse, President, in the Chair; Dr. Floyd M. Crandall, New York, Secretary.

The President stated that the first order of business was roll call.

The Secretary said that at a meeting of the Council, held two years ago, it was resolved that the roll call at the first session of the House of Delegates should be dispensed with, but that the roll would be called immediately preceding the electing of officers on Tuesday morning. The Council at that time also directed him to make a record of the delegates in attendance at the first session on cards. This would save time and enable him to make a more accurate record of the delegates in attendance. He therefore moved that the calling of the roll be dispensed with at this time. Seconded and carried.

The President: Reading of the minutes of the previous meeting (1918) of the House of Delegates.

The Secretary: These minutes were published in the New York State Journal of Medicine June, 1918, page 244.

It was moved and seconded that the minutes be adopted as published. Carried.

The President: The next order is the report of the President. The President's report is published in the printed reports of officers which have been distributed to the members of the House of Delegates, so that it is unnecessary for me to read the report. I would like to add the following to the report as published:

Supplementary Report of the President.

As a supplementary Report to that printed and distributed among the Delegates, I should like to add a few words regarding the present status of the Amendment to the Medical Practice Act, and the Davenport-Donohue Compulsory Health Insurance Bill, referred to in the aforesaid report.

The Amendment to the Medical Practice Act, commonly known as the Medical Registration Act, was introduced in the Legislature by the State Department of Education with the official endorsement of the Council of the Medical Society of the State of New York and with the support of the Medical Colleges. There could be no opposition to this bill excepting by the Medical Profession outside this Society and there was none, or by the illegal practitioners of medicine, quacks, fakers, pseudo-doctors and other parasites, who were practicing medicine illegally with impunity because of the lax enforcement of the existing law. As it happens, the chiropractors had a bill before the Legislature which, if enacted, would permit them to practice legally their narrow and peculiar cult entitling them to become Doctors of Chiropracty. The Assembly did not pass their bill and it was defeated, whereupon their champion in the Assembly set about during the last days of the Legislature to defeat the Medical Practice Act, and succeeded, thereby permitting many of these gentlemen and others to continue their present violation of the law, as they could not have done, had the Medical Practice Act passed, an act demanded by the Board of Regents of the State Educational Department and the organized medical profession of this State.

The defeat of this measure intended to protect the public and the medical profession is an example of the kind of legislation that certain kind of legislators put over on decency in the last hours of the session or when they think the general public is not interested, and is an evidence of the regard which politicians hold of the political influence of the medical profession. The Davenport-Donohue Compulsory Health Insurance Bill passed the Senate by four votes but was finally defeated in the Assembly. It received the full support of the Democratic Party and of certain Republican Assemblymen, but not enough of the latter to carry the Bill through. It is the first time in the history of the United States that any Compulsory Health or Social Insurance Bill has passed any house of any State Legislature and failed in finally becoming a law because of the large majority in the Assembly of the party opposed to that of the Governor advocating the law. It came so nearly becoming a law in spite of the combined opposition of a United Medical profession, the Manufacturers' Association and other powerful opponents of Compulsory Health Insurance, that the subject has become one of immediate practical importance, and one, which, in my judgment, cannot be longer successfully fought by a mere blind opposition. The general medical profession of the State to exert a real influence on public opinion should, it seems to me, exhibit a spirit of being ready to consider the subject from all sides and then be ready to express an opinion which is based on sound and convincing arguments that will carry weight not only with us but with the public.

My recommendation is that, before taking final action, the subject of Compulsory Health Insurance be referred by this body to a Committee to study it with special reference to its relationship to the medical profession and report back to a special meeting of the House of Delegates called this Fall before the next meeting of the Legislature.

In the meantime the whole profession will have had time to consider the matter. If a Health Insurance Bill is to be enacted as in my judgment one will be in the near future, it would seem the part of wisdom and common sense, that we should before such a bill becomes a law, say under what conditions the medical profession will serve, rather than to wait until the Bill is a law and then take what is forced upon us as was the case in Germany, England and other countries, greatly to the detriment of every one concerned.

In order that this body may hear first hand from the introducer of the bill in the Senate, I have invited Senator Davenport to present the matter to the House of Delegates at the meeting this evening, so as to let the medical profession know his side of the question.

Dr. Charles G. Stockton moved that the Supplementary Report of the President be referred with the President's Report to a committee to be appointed and report to the House of Delegates later. Seconded and carried.

The President: The next report is that of the Council. There are no recommendations in this report.

The President: Report of the Secretary.

The Secretary: There are no recommendations in my report, but there are two brief memoirs of men who have served this Society long and well, and it seems to me it would not be inappropriate to spend a few moments of time in recognition of these two men.

The Secretary then read that portion of his report in memoriam of Dr. Frank Van Fleet, and Dr. W. Stanton Gleason.

Dr. Henry Lyle Winter presented the following Memorial to Dr. Gleason:

In Memoriam

William Stanton Gleason.

Born at Sag Harbor, Long Island, June 24, 1860.
Died at Newburgh, New York, February 3, 1919.

In the death of Dr. Gleason, the medical profession of the State has sustained a serious loss. From his early professional years, he devoted himself to promoting the welfare of his profession and to advancing the opinions of his County Society. So effective was his work, that he was selected by his locality to represent it in the State Organization, in which he soon became a quiet but effective power. He served in many capacities, the chief being that of a member of the Finance Committee of the State Society, where his business capacity and executive ability displayed themselves and proved of the utmost value.

When the feeling arose later among the general practitioners through the State that a president should be selected who understood them and their needs, Dr. Gleason was universally looked to as their best representative. On this issue he was elected to the presidency in 1915 and his administration was a most valuable and creditable one. The profession and the Society have had no more devoted and efficient friend.

Dr. Gleason was an internest of high ability and was always in the van of medical progress. He had long been recognized in the Central Hudson Valley as the most satisfactory of consultants, and his opinion, both personal and professional, was profound.

He died in harness after a brief illness induced by untiring work in the influenza epidemic through which this country just passed.

Therefore, *Be it Resolved*, That this memoir be spread upon the minutes of the Society and that a copy be sent to the family of Dr. Gleason.

HENRY LYLE WINTER.

DR. WENDELL C. PHILLIPS: I move the adoption of the memoir and resolution offered by Dr. Winter. Seconded and carried.

DR. WILLIAM S. GOTTHEIL: I move that a committee be appointed by the President to whom shall be referred the President's Report and the Supplementary Report of the President, with instructions to report to the House of Delegates at the close of this session. Seconded and carried.

THE PRESIDENT: The Chair appoints as the Committee on President's Report and the Supplementary Report of the President, Drs. C. G. Stockton, A. W. Booth, J. M. Van Cott, G. M. Lewis and R. P. Higgins.

THE PRESIDENT: The next order is Reports of Standing Committees. The first is the Committee on Finance. There are no recommendations in this report Adopted as printed.

Report of the Committee on Publication appointed by the Council. There are no recommendations in this reported. Adopted as printed.

Report of the Committee on Arrangements was read by the Chairman, Dr. Dwight H. Murray. Adopted as read.

THE PRESIDENT: The next report is that of the Committee on Scientific Work.

DR. PARKER SYMS: We have no additions or recommendations to make in addition to the published report.

THE PRESIDENT: Report of the Committee on Legislation.

DR. JAMES F. ROONEY: The report is published, but as acting Chairman I wish to present the following Supplementary Report:

Supplemental Report, Committee on Legislation.

To the House of Delegates:

In addition to the bills described in the former report, a bill permitting Christian Scientists to treat venereal diseases was killed in Committee.

The medical registration bill was defeated by being recommitted to Rules Committee in the Assembly by the leader of the forces opposed, Mr. Fearon of Syracuse.

The chiropractors, who were unable to secure the passage of their own legislation, were, by organizing a very intensive campaign, able to secure enough votes to prevent the passage of the medical registration bill, which died largely because of the apathy of the medical profession.

The Compulsory Health Insurance bill was, as you already know, passed by the Senate and was defeated in the Assembly. For this defeat the medical profession has chiefly to thank the unwavering attitude of the Speaker of the Assembly against all of the socialistic legislation proposed, which opposition was upon the broad ground of Americanism as against Prussianism and paternalism.

The following recommendations are herewith submitted:

1. That as first recommended by me in 1915 at the annual meeting of this body, a Bureau of legislative information be instituted with its office at Albany under the direction of the Committee on Legislation, for the purpose of collecting information from all sources relating to the medical profession, public health and other movements affecting the general public welfare. This Bureau will serve as a central point for the dissemination of all facts relating to the medical profession throughout the State and will be a continuing source of information for all members of the State Society. It is proposed to secure and keep on file at this office copies of all laws or proposed laws of every State in the Union, in order that full information may be had of any measure affecting the public health or medical profession for immediate use.

The location at Albany is necessary because of its central character, its proximity to the Legislature and to the State Medical and Law Libraries and the Educational Department.

The estimated cost for the initiation of this enterprise is approximately as follows:

Salary of executive officer	$1,500
Cost of quarters	600
Furniture and equipment	800
File clerk and stenographer	750
Total	$3,650

It is not impossible that quarters may be secured in the Educational Building without cost to the Society.

2. That a definite educational campaign be conducted by the Society throughout the State either alone or in conjunction with other bodies who are opposed to compulsory health insurance to make evident to the people who are today absolutely uninformed of the fallacy of this scheme.

3. An active and urgent presentation of the necessity for the enactment of the so-called Medical Registration Bill at the next session. This campaign should be made by the various county societies and should commence immediately after the next election for its effect upon their representatives in the Legislature.

JAMES F. ROONEY,
Acting Chairman.

It was moved that the report and the supplementary report of this committee be referred to a special committee to be appointed by the Chair. Seconded and carried.

The President appointed as the special committee to whom to refer these reports and similar reports and resolutions Drs. J. Van D. Young, Parker Syms, A. W. Ferris, J. R. Kevin and C. J. Patterson.

THE PRESIDENT: Report of the Committee on Public Health and Medical Education.

DR. JOSHUA M. VAN COTT: This report has been published. There are no recommendations in it, and I move that it be adopted. Seconded and carried.

THE PRESIDENT: Report of special committee to consider economic methods in caring for the public health.

DR. F. PARK LEWIS: This report has been published, with recommendations at the end of the report.

THE PRESIDENT: Report of the Committee on Medical Research. Dr. Frederic E. Sondern, chairman of this committee, is not present. The report is printed, but there are no recommendations in it. Adopted as printed.

The President: The next committee report is that of the Committee on Medical Economics.

Dr. Henry Lyle Winter: The report is printed. We have no supplementary report to make. Adopted as printed.

The President: Under reports of special committees the first committee to report is that of the special committee on the establishment of a bureau of legislative information.

Dr. George W. Kosmak: I have nothing to add to the report as published.

Dr. James F. Rooney: I move that this report take the same course as the preceding reports. Seconded and carried.

The President: Report of the Special Committee on Drug Addiction. Dr. Edward B. Angell, chairman, is not present. The report is printed in the published reports.

Mr. James Taylor Lewis, Counsel for the State Society, asked unanimous consent, which was granted, to speak on this report. He said that this question of drug addiction was one of the most serious and all-absorbing matters that the legal profession of the State of New York just now had to deal with. He stated that the report should be referred to a special committee because of the position taken by the United States Government relative to the Harrison Law, which was not entirely in accord with the various efforts of the New York State Government; the efforts of the agents of both the State and the United States Governments were not in complete accord. He said that he was afraid that within the next year there would be a widespread infringement of these laws, and expressed the hope that some member of the House of Delegates would make a motion asking for the appointment of a special committee to compile such information as was available upon this question of drug addiction and drug addicts. He stated that one of the most relentless and unwarranted attacks was now being made upon one of the members of the profession of this State, and for that reason alone the matter merited very careful consideration, because in the great centers of population agents of the State and Government were at work without proper advice from scientific men in reference to the treatment of the disease following drug addiction; these men were placing reputable physicians at prison doors. He regretted that Dr. Angell was not present to give the members of the House of Delegates the benefit of what he personally had learned.

The President: The members of the profession should heed what Mr. Lewis has just said.

It was moved that a special committee be appointed by the President to consider this report instead of referring it to the General Reference Committee. Seconded and carried.

The Secretary presented a report from Dr. Arthur G. Root, of Albany, relative to a bill for the prosecution of violators of the Medical Practice Act.

Dr. Henry S. Stark moved that the report be accepted. Seconded and carried.

The President: Report of the Committee on Prize Essays.

The Secretary read the report of this Committee as follows:

Your Committee would report as follows: But one essay, bearing the motto "Labor Omnia Vincit," has been offered, and it is our unanimous opinion that while the paper presents a very thorough summary of the subject, it does not exhibit evidence of sufficient original research to merit the awarding of the Merritt E. Cash Prize, for which it competed. No essay was offered for the Lucien Howe Prize. Respectfully submitted,

Albert Vander Veer, *Chairman,*
Edward D. Fisher,
Charles G. Stockton.

It was moved that the report be accepted as read. Seconded and carried.

The President: I will appoint as the Special Committee on Drug Addiction Drs. P. B. Brooks, Chairman; A. P. Humpstone, J. Q. Quigley, W. M. Dunning and G. W. Wende.

The President: The reports of the Councillors of the Second, Third, Fourth, Fifth, Sixth and Eighth District Branches are published. What shall be done with these reports?

Dr. Henry Lyle Winter: I move they be accepted and placed on file. Seconded and carried.

The Secretary read the following amendments to the Constitution and By-Laws which were submitted at the annual meeting last year, and which are now presented for action:

Amend the Constitution, Article IV, by striking out the words "each county society shall be entitled to elect to the House of Delegates as many delegates as there shall be state assembly districts in that county at the time of the election, except that each county society shall be entitled to elect at least one delegate, and except that whenever at the time of election the membership of a county society shall include members from an adjoining county or counties in which there shall be no county society in affiliation with this society such county society shall be entitled to elect, from among such members, as many additional delegates as there are assembly districts in the county or counties so represented in its membership."

And inserting the words: "The delegates shall be apportioned among the constituent societies in proportion to their actual active membership, except that each constituent society shall be entitled to elect at least one delegate. The House of Delegates may from time to time fix the ratio of apportionment."

Dr. E. Eliot Harris moved that the House of Delegates resolve itself into the Committee of the Whole for the purpose of considering the amendment to Article IV of the Constitution. Seconded and carried.

The House then went into a Committee of the Whole. President Halsted appointed Dr. E. E. Harris as Chairman, with Dr. F. M. Crandall Secretary.

After a free discussion of the amendment the Committee arose and the House of Delegates was called to order by President Halsted. The Chairman of the Committee of the Whole stated that he was instructed by the Committee to report adversely on this amendment to the House of Delegates.

Dr. Daniel S. Dougherty moved that this amendment be referred to Mr. Lewis, counsel for the Society, for consideration and to report back to the Council at his pleasure. Seconded and carried.

Dr. Charles G. Stockton: Your special committee is ready to report.

The President: Proceed.

Dr. Stockton then presented the following report:

To the President and House of Delegates:

The Committee appointed to report on the supplementary report of the President, having given it consideration, respectfully submits the following:

In regard to that portion of the President's report having to do with the Donohue-Davenport Bill, we approve and advise the adoption of the recommendation made in supplementary report to the end that there be appointed a special committee named by the President to study the subject and report back to a special meeting of the House of Delegates, to be called this autumn before the next meeting of the Legislature.

In regard to that portion of the President's report with reference to the invitation to Senator Davenport:

1. Senator Davenport was very courteous in the hearing on this bill in the Senate to the medical profession, and for this reason the same courtesy should be extended to him. A refusal to hear him would undoubtedly be considered a direct discourtesy of the organized medical profession of this State and might have an effect on future medical legislation.

2. The House of Delegates should welcome any direct information on any side of this important question.

3. The President was entirely within his rights in extending this invitation which he did solely for the benefit and enlightenment of the House of Delegates and the Committee recommends that his action be sustained.

Charles G. Stockton, *Chairman,*
G. Massillon Lewis,
Arthur W. Booth,
Joshua M. Van Cott,
R. Paul Higgins.

Dr. E. Eliot Harris: I move the adoption of the report. Seconded and carried.

Dr. Daniel S. Dougherty: I move that it be the sense of this House of Delegates that no debate or argument shall take place during or after Senator Davenport's remarks this evening. Seconded and carried.

Dr. James F. Rooney: I move we take a recess to reconvene at 8 P. M. Seconded and carried.

Evening Session.

The House of Delegates reconvened at 8 P. M. and was called to order by the President.

President Halsted introduced Senator Davenport, who addressed the House of Delegates on the subject of Compulsory Health Insurance.

At the conclusion of Senator Davenport's remarks Dr. Delphey moved that a vote of thanks be extended to Senator Davenport for his interesting remarks. Seconded and carried.

Dr. Henry S. Stark asked whether members of the society, who were not delegates, were entitled to attend the sessions of the House of Delegates.

Dr. Wendell C. Phillips said there was never a time in the history of the society when visiting physicians were not welcome to attend the meetings of the House of Delegates and listen to the proceedings.

Dr. E. Eliot Harris and Dr. Floyd M. Crandall endorsed what Dr. Phillips had said.

The President ruled that the sessions of the House of Delegates were open meetings and that visiting physicians were welcome to attend and listen to the proceedings, but they could not speak or vote.

The Secretary read an amendment to Article VI, Section 1, of the Constitution, by adding the following: "The annual meeting shall take place the first week in May."

Mr. Lewis was asked to interpret this amendment, and said that the House of Delegates could select the day and month for its annual meeting, but the law could not be changed by any resolution which the House of Delegates might adopt.

Dr. E. Eliot Harris moved that this amendment be laid upon the table. Seconded and carried.

The Secretary read the amendment to the By-Laws, Chapter VIII, Section 4, by striking out the words: "The Committee on Legislation shall consist of a chairman to be elected by the House of Delegates and of the chairmen of the Legislative Committees of the constituent societies."

And substituting the following: "The Committee on Legislation shall consist of three members, including the Chairman."

Dr. E. Eliot Harris moved the adoption of this amendment, and further, that any section in the By-Laws which may be contradictory thereto be made to conform to it. Seconded and carried.

The Secretary read the following amendment to the By-Laws, Chapter VIII, Section 4:

Amend the By-Laws, Chapter VIII, Section 4, by adding after the words "approved by the Council of the Society," the following: "Except that it shall have a free hand in dealing with members addicted to practices considered not strictly professional in their methods of practice."

The By-Laws will then read:

"Each district branch may adopt a constitution and by-laws for its government, provided that the same shall first be approved by the Council of the Society, except that it shall have a free hand in dealing with members addicted to practices considered not strictly professional in their methods of practice."

Dr. E. Eliot Harris moved that the section dealing with the disciplining of members be not adopted. Seconded.

Dr. Henry Lyle Winter moved that the whole amendment be not adopted. Seconded and carried.

Dr. Harris made the following motion:

Action on notice presented at the last meeting to change time and place of annual meeting. (See Constitution, Article VI, Section 1.) Seconded and carried.

The President: We now come to "New Business." Is there anything under this head to be brought before the House of Delegates?

The Secretary presented the application of Dr. Porter Farley, of Rochester, for retired membership, and said that Dr. Farley had complied with all requirements.

It was moved that Dr. Farley be elected a retired member. Seconded and carried.

Dr. Wendell C. Phillips moved that when the House of Delegates adjourns it adjourn to meet in the same place at 9:30 Tuesday morning, and that the first order of business shall be the election of officers. Seconded and carried.

Dr. Edward L. Hunt presented a communication regarding the creation of a Section on Neurology and Psychiatry, and moved that it be the sense of the House of Delegates that such a section be established. Motion seconded and carried.

The Secretary stated that he had received a similar communication for the establishment of such a section from Dr. Marcus B. Heyman.

Dr. John Van Doran Young, Chairman, presented the report of the special committee as follows:

Report of Special Committee.

1. Your committee coincides with the views expressed by your President in relation to compulsory health insurance, and concurs with him in his advice for further careful study of the subject.

2. Your committee also concurs with the President's recommendation that a Bureau of Legislative Information be established, provided necessary funds can be secured.

3. Your committee is not in favor of the proposed amendment to the Medical Practice Act which provides for the annual registration of physicians, in order that a fund may be provided and the necessary information be secured whereby illegal and unlicensed practitioners of medicine may be prosecuted. Since the proposed measure is for the benefit of the people of the State they should bear the expense by taxation. They approve of the proposition that the Board of Regents should be empowered to conduct, and should conduct, prosecutions of illegal practitioners through the office of the Attorney-General of the State.

4. Your committee earnestly hopes that the recommendation of the President, urging upon the county societies an increase in membership, be brought to the attention of the officers of each county society.

5. In relation to the report of Dr. Rooney on legislation and his supplementary report thereon, your committee feels that it has not had time to consider this important matter and recommends that it be discussed fully by the House of Delegates; also that the same course be followed in relation to the report of the special committee on the establishment of a bureau of legislative information, Dr. Kosmak, Chairman.

6. Your committee would, however, state that it recognizes the extreme desirability of a Research Bureau of Public Health Legislation, and its adequacy

in providing practically all information essential to successful campaigns against the licensing of irregulars to practice medicine, and against meddlesome efforts to tinker with the Medical Practice Act and with educational legislation. Your committee recommends the establishment of such a bureau when annual funds can be secured for such a purpose, and further recommends its location at Albany.

7. Your committee considers that the establishment of numerous, easily accessible, diagnostic clinics in which group diagnoses shall be made, is ideal; but that no practical method has as yet been proposed; and it advises that the special committee be continued and requested to elaborate an actual and practical system, and report it at the next meeting of the House of Delegates; and that meanwhile the delegates of the Medical Society of the State of New York to the American Medical Association be directed to present this important matter to the House of Delegates of the American Medical Association.

John Van D. Young, *Chairman,*
Parker Syms,
Albert W. Ferris,
J. Richard Kevin,
Christopher J. Patterson.

The President: What disposition do you wish to make of this report?

Dr. E. Eliot Harris: I move that the report be considered seriatim. Seconded and carried.

Dr. Young read the first section.

Dr. Wendell C. Phillips moved that it be adopted. Seconded and carried.

Dr. Young read Section 2, action on which was deferred until the House of Delegates heard from Dr. Rooney.

Dr. Young read Section 3.

Dr. James F. Rooney moved that the House of Delegates direct its officers and the Committee on Legislation to reintroduce at the next session of the Legislature the medical registration bill. Seconded.

Dr. Wendell C. Phillips moved to amend that the House approve the bill, barring the proposed tax of $2 from each member as a registration fee. Seconded.

Dr. Dougherty made the point of order that this section of the report should be either accepted or rejected.

The Chair ruled that the point of order was well taken.

Dr. Frank S. Swain moved that this section of the report of the committee be rejected. Seconded and carried.

Dr. Young read Section 4.

Dr. E. Eliot Harris moved that the recommendation be adopted. Seconded and carried.

Dr. Young read Section 5.

After discussion by Drs. G. W. Kosmak and H. S. Stark, Dr. W. C. Phillips moved that the report of the special committee on the establishment of a Bureau of Legislative Information be adopted. Seconded.

After further discussion by Drs. H. S. Stark, J. M. Van Cott, C. G. Stockton, J. F. Rooney, E. E. Harris, H. W. Berg and G. W. Kosmak, Dr. W. S. Gottheil moved that further consideration of the matter be postponed until after the election of officers Tuesday morning. Seconded and carried.

Dr. Gottheil moved that the House of Delegates do now adjourn. Motion seconded and on being put to a vote was declared lost.

Dr. Young read Section 6.

It was moved that this recommendation be adopted. Seconded.

Dr. James F. Rooney moved that for the present this motion be laid on the table, and that the committee continue its report tomorrow morning on the establishment of a Bureau of Legislative Information, and that the motion then be taken from the table as a part of the order of business following the election of officers.

Dr. E. Eliot Harris made the point of order that there were too many questions involved in the motion of Dr. Rooney.

The President said that the point of order was well taken.

Dr. Eden V. Delphey moved as a substitute that the matter be postponed until tomorrow morning and be taken up following the election of officers.

The substitute was seconded, accepted, and on being put to a vote was carried.

On motion of Dr. Rooney the House of Delegates adjourned until 9:30 A. M. Tuesday.

ADJOURNED MEETING OF THE HOUSE OF DELEGATES.

The House of Delegates met at 10 A. M. and was called to order by the President.

The Secretary called the roll and the following delegates responded: Arthur J. Bedell, Thomas W. Jenkins, James H. Mitchell, Chauncey R. Bowen, J. Lewis Amster, Henry A. Dodin, Cornelius J. Egan, Isidore H. Goldberger, William E. Howley, Edmund E. Specht, Nathan B. Van Etten, John E. Virden, Frank M. Dyer, Charles S. Wilson, Edward Torrey, M. P. Conway, Vernon M. Griswold, J. William Morris, Arthur W. Booth, George D. Johnson, Mahlon B. Holcombe, Charles J. Kelley, Robert W. Andrews, John A. Card, James E. Sadlier, Arthur G. Bennett, George F. Cott, Harvey R. Gaylord, Francis P. Lewis, Julius Richter, Charles G. Stockton, Harry R. Trick, Grover W. Wende, Guy S. Houghton, John W. Blackett, William J. Kennedy, Robert Selden, Harry H. Halliwell, James F. McCaw, Elias H. Bartley, William F. Campbell, Robert E. Coughlin, Adolph F. Erdmann, George D. Hamlin, J. Richard Kevin, James C. Hancock, William Linder, Leon Louria, Walter D. Ludlum, Sylvester J. McNamara, William V. Pascual, Mary E. Potter, Charles E. Scofield, John J. Sheehey, John G. Williams, F. Edward Jones, Frederick J. Bowen, Nelson O. Brooks, B. J. Duffy, Irving E. Harris, Owen E. Jones, Floyd S. Winslow, Richard R. Canna, Robert Abrahams, Theodore H. Allen, George Barrie, Henry W. Berg, Eden V. Delphey, Daniel S. Dougherty, Lewis F. Frissell, William S. Gottheil, E. Eliot Harris, David E. Hoag, Ward B. Hoag, George W. Kosmak, J. Milton Mabbott, Charles H. Peck, James Pedersen, Wendell C. Phillips, Alfred C. Prentice, Malcolm C. Rose, Mary Dunning Rose, Henry S. Stark, Howard C. Taylor, Orrin S. Wightman, John Van Doren Young, Luther M. Jayne, Edward R. Evans, Morris J. Davies, George M. Fisher, Frederick H. Flaherty, Albert E. Larkin, Edward J. Wynkoop, William W. Skinner, John I. Cotter, John Dugan, Walter H. Kidder, Julian C. Smith, Thomas C. Chalmers, Frank P. Hatfield, Martin M. Kittell, William J. Malcolm, L. Howard Moss, Thurman A. Hull, Christopher J. Patterson, George A. Leitner, William G. Cooper, William B. Hanbidge, G. Scott Towne, Henry G. Hughes, Frederick C. Reed, Albert W. Ferris, Elliott I. Dorn, Frank S. Swain, Frank Overton, William H. Ross, Luther C. Payne, George M. Cady, Luzerne Coville, Frank L. Eastman, Zenas V. D. Orton, Dwight F. Johnson, John F. Black, Edward F. Briggs, Giovanni Stella, William H. Purdy, Louis V. Waldron, James E. Slaught, George E. Welker.

The following officers and chairmen of committees were present: Thomas H. Halsted, James F. Rooney, W. Meddaugh Dunning, Floyd M. Crandall, Harlow Brooks, Edward L. Hunt, Joseph B. Hulett, Luther Emerick, G. Massillon Lewis, R. Paul Higgins, Albert T. Lytle, Dwight H. Murray, Parker Syms, Joshua M. Van Cott, Henry Lyle Winter.

The Secretary stated that he had received a certificate from the secretary of the Schoharie County Medical Society, naming Dr. Herbert J. Wright as delegate and Dr. Howard B. Bartholomew as alternate, but inasmuch as neither Dr. Wright nor Dr. Bartholomew could attend the meeting, Dr. Le R. Becker wished to serve as delegate for Dr. Wright.

Dr. Becker said he had a letter from Dr. Wright saying that he could not attend the meeting, and Dr. Bartholomew was not available, and therefore Dr. Wright desired him to serve as delegate, although he had no credentials from the County Medical Society.

Dr. Frank S. Swain moved that Dr. Becker be seated as a delegate from the county of Schoharie. Motion seconded.

Dr. Wendell C. Phillips asked for a ruling from the Counsel of the Society.

Mr. James Taylor Lewis said that Dr. Becker did not have the semblance of credentials to entitle him to a seat in the House of Delegates; that the credentials and the authority must come from the president and secretary of the County Society to which he belongs.

The President accordingly ruled that Dr. Becker was not a legally elected delegate according to the Constitution.

After discussion by Dr. H. G. Hughes, Dr. Swain appealed from the decision of the Chair.

On putting the question of appeal to the House, the ruling of the Chair was sustained, and Dr. Becker was declared not a delegate.

The election of officers being the next order of business, Dr. Daniel S. Dougherty moved that nominating speeches be limited to two minutes. Seconded and carried.

Dr. Arthur J. Bedell nominated Dr. James F. Rooney, of Albany, for President.

Dr. James F. McCaw, of Watertown, nominated Dr. Grant C. Madill, of Ogdensburg, for President.

These nominations were seconded by several delegates.

The President appointed as tellers Drs. L. Coville, A. W. Booth and F. H. Flaherty.

Before the House proceeded to ballot, Dr. Henry G. Hughes made the point of order that according to Article III, Section 3, of the Constitution, Dr. Madill was ineligible for the office of President. He said that until within a month Dr. Madill had been a member of the House of Delegates and the term of office for which he was elected had not expired.

The President ruled that Dr. Madill's term of office had expired; that he had resigned, and the Secretary had received his resignation.

Dr. Hughes then read the following from Article III, Section 3, of the Constitution: "No delegate elected to the House of Delegates shall be a candidate for a general office in the Society until after the expiration of the term for which he shall have been elected a delegate, and no person shall be elected to any office in the Society who shall not have been a member of the Society for two years immediately preceding the date of his election."

The Chair again ruled that Dr. Madill's term of office had expired when he resigned, and that his resignation was duly accepted.

Dr. Hughes appealed from the decision of the Chair.

Dr. Phillips said the facts were that Dr. Madill had resigned as a delegate to the State Society; that his resignation was accepted by the County Society that elected him; that his successor was appointed, and that this successor sat in the House of Delegates yesterday and last evening and voted. He urged not only that the Chair be sustained in his ruling, but before that he would like to ask Mr. Lewis, Counsel of the Society, for an interpretation.

Mr. Lewis said that this was not the first time such a matter had come up and on account of the wording there had been some misunderstanding about it. So far as Dr. Madill was concerned, the office of delegate and term for which he was elected terminated the minute he resigned and his resignation was accepted by the body that elected him a delegate.

After further discussion the question of appeal from the decision of the Chair was put, with the result that eighty-nine voted in favor of sustaining the Chair, and thirty-five were opposed.

The Chair being sustained, Dr. Madill was declared a legal candidate for the office of President.

The tellers reported that there were 141 votes cast, of which Dr. Madill received 80 and Dr. Rooney 61.

The President declared Dr. Madill duly elected President of the Society.

Dr. James F. Rooney moved that Dr. Madill's election be made unanimous. Seconded and carried.

The following officers were nominated and declared duly elected:

First Vice-President, Dr. Dwight H. Murray, Syracuse; Second Vice-President, Dr. W. Meddaugh Dunning, Bronx; Third Vice-President, Dr. G. W. Cottis, Jamestown; Secretary, Dr. Floyd M. Crandall, New York; Assistant Secretary, Dr. Edward Livingston Hunt, New York; Treasurer, Dr. Harlow Brooks, New York.

Chairman of Committee on Scientific Work, Dr. Parker Syms; Chairman of Committee on Public Health, Dr. Joshua M. Van Cott; Chairman of Committee on Legislation, Dr. J. Richard Kevin; Chairman of Committee on Medical Economics, Dr. Henry Lyle Winter; Chairman of Committee on Medical Research, Dr. Frederic E. Sondern; Committee on Prize Essays, Drs. Albert Vander Veer, Chairman, Edward D. Fisher and Charles G. Stockton.

Delegates to the American Medical Association for two years: Drs. James F. Rooney, Albany; Thomas H. Halsted, Syracuse; Dr. George D. Stewart, New York; William F. Campbell, Brooklyn; Floyd M. Crandall, New York; for one year, E. Eliot Harris, New York.

Alternate delegates for two years: Drs. Grover W. Wende, Buffalo; William S. Gottheil, New York; James F. McKernan, New York; Sylvester J. McNamara, Brooklyn; Thomas C. Chalmers, Forest Hills; for one year, G. Scott Towne, Saratoga Springs.

Dr. Wendell C. Phillips extended an invitation to the House of Delegates to hold its next annual meeting in New York City.

It was moved and seconded that the invitation be accepted with thanks. Carried.

Dr. E. Eliot Harris moved that the time of meeting be left to the Council of the Society. Seconded and carried.

Dr. Parker Syms nominated Dr. Wendell C. Phillips as Chairman of the Committee on Arrangements.

Dr. E. Eliot Harris moved that the Secretary be instructed to cast one ballot of the House for Dr. Phillips as Chairman of the Committee on Arrangements. Seconded and carried.

The Secretary cast the ballot as instructed and Dr. Phillips was declared duly elected.

The President announced the following as the committee to take up the subject of compulsory health insurance during the Summer and to report to the special meeting of the House of Delegates to be called some time in the Autumn: Drs. Harvey R. Gaylord, Chairman; the retiring President, the President-elect, Chairman of the Committee on Economics, Chairman of the Committee on Legislation, Drs. G. W. Kosmak, J. A. Lee, J. F. Rooney, A. W. Booth, W. H. Kidder, and the eight Councillors of the district branches.

Dr. Wendell C. Phillips moved that the committee appointed by the Chair be approved by the House of Delegates. Seconded and carried.

Drs. H. L. Winter and E. J. Wynkoop were appointed a committee to find the President-elect and escort him to the platform.

Dr. Madill said: "Mr. President and members of the House of Delegates, in accepting the presidency, I wish to thank you for the great honor you have conferred upon me in making me President of the representative organization of the medical profession of the State of New York. I fully realize the responsibility that rests upon the President of this great Society. There are a great many problems which will have to be solved within the next few years, and I wish to pledge myself to do the best that I can to have everything that comes up in the way of legislation affecting the medical profession, for the benefit of the entire profession."

Dr. Eden V. Delphey moved that the motion creating a special committee to study the subject of health insurance be reconsidered, for the reason that the Committee on Economics could study such questions and it was not necessary to have a special committee for this purpose. Seconded.

Dr. E. Eliot Harris moved that Dr. Delphey's motion be laid on the table. Seconded and carried.

Dr. Albert T. Lytle moved that this special committee submit a constructive plan for comment and suggestions to the several county societies early in the Autumn, and that at least two members of this committee be urged to attend the county societies' meetings, one of whom shall be the Councillor of the county society. Seconded.

Dr. Frank S. Swain moved that the question of instructions to the committee be laid upon the table. Seconded and carried.

The President stated that it was now in order to resume the discussion on the establishment of a Bureau of Legislative Information.

The subject was further discussed by Drs. James F. Rooney, William S. Gottheil, Henry Lyle Winter, Joshua M. Van Cott, Charles G. Stockton, George W. Kosmak, Daniel S. Dougherty, Wendell C. Phillips and Henry W. Berg.

Dr. Daniel S. Dougherty moved that action on this subject be withheld until after Dr. Rooney was heard from and then refer the matter to a committee. Seconded.

Dr. Charles G. Stockton moved as an amendment that the report of the Committee on the Establishment of a Bureau of Legislative Information, together with the report of Dr. Rooney and other reports bearing on the subject, be referred to the Council and the special committee with instructions to examine the question jointly with the Committee on Medical Economics and report at the next meeting of the House of Delegates to be called in the Autumn.

The amendment was seconded, accepted, and after Dr. Phillips (with the consent of his seconder) had withdrawn his motion to adopt the report, the amendment of Dr. Stockton was put and carried.

Dr. James F. Rooney offered the following resolution:

Resolved, That this House of Delegates approve the plan of a State Department of Health in co-operation with the State Industrial Commission to make a survey of health conditions among industrial workers and their families with the object of devising the best methods of improving such conditions. Motion seconded by Dr. Delphey.

Dr. Phillips asked whether this motion would obligate the expenditure of money by the Society in any way.

Dr. Rooney replied that it would not obligate the Society to any expense whatever.

Motion put and carried.

Dr. Malcolm C. Rose offered the following resolution:

Resolved, That a location bureau, listing the openings for general and special practice be established; this list to be kept in the office of the Secretary of the Medical Society of the State of New York; this list to be collaborated and kept up to date by the secretaries of the county medical societies; and that our delegates to the American Medical Association be instructed to advocate the establishment of such bureaus in all States.

Dr. Harris moved that this resolution be referred to the Council of the Society. Seconded and carried.

Dr. W. B. Hoag presented the following amendment to the Constitution:

Amend the Constitution, Article IV, by striking out the words "each county society shall be entitled to elect to the House of Delegates as many delegates as there shall be State Assembly districts in that county at the time of the election, except that each county society shall be entitled to elect at least one delegate, and except that whenever at the time of election the membership of a county society shall include members from an adjoining county or counties in which there shall be no county society in affiliation with this Society, such county society shall be entitled to elect, from among such memoirs, as many additional delegates as there are assembly districts in the county or counties so represented in its membership."

And inserting the words: "The delegates shall be apportioned among the constituent societies in proportion to their actual active membership, except that each constituent society shall be entitled to elect at least one delegate. The House af Delegates may from time to time fix the ratio of apportionment." (To lie over until next year.)

Dr. Dwight H. Murray presented the following amendment to the Constitution:

To amend Section 1, Article III, as follows:

The House of Delegates shall annually elect a Speaker and a Vice-Speaker, these officers to serve for one year, or until their successors are elected and installed. These officers must be Fellows, and must have been Fellows of the American Medical Association for at least the two years immediately preceding their election to this office. They need not, however, be members of the House of Delegates, but they shall possess all powers of the presiding officer of that parliamentary body. These elections shall follow the election of the Treasurer of the Association.

All sections of the Constitution and By-Laws inconsistent with this amendment shall be modified to conform to this section. (To lie over until next year.)

Dr. William S. Gottheil offered the following amendment to the By-Laws, Chapter 2: "No person, not a delegate, shall be allowed the privileges of the floor in the House of Delegates save on an affirmative vote of the House." (To lie over until next year.)

The President stated that the matter of group diagnostic clinics could now be considered by the House.

Dr. Stockton moved that this matter be taken from the table. Seconded and carried.

Dr. Young presented that portion of the report of the special committee referring to diagnostic clinics.

Dr. Harris moved that the report of the committee be accepted. Seconded and carried.

Dr. Delphey offered the following resolution:

Resolved, That the delegates of the Medical Society of the State of New York to the American Medical Association be and are hereby instructed to introduce a resolution in the House of Delegates of the American Medical Association opposing the scheme of compulsory health insurance and to support it in every way possible. Seconded.

After considerable discussion for and against the passage of this resolution, a vote was taken with the result that thirty-six favored the adoption of the resolution and twenty-three were opposed to it.

The resolution was declared adopted.

Dr. J. M. Van Cott offered the following and moved its adoption:

Resolved, That a special committee on public health of the Greater City of New York be appointed, consisting of three members each from the Public Health Committee of the medical societies of The Bronx, Kings New York, Queens and Richmond for the purpose of conferring and advising with the public officials of the Greater City of New York on the matters of hygiene and public health. This special committee shall co-operate with the Public Health Committee of this Society, and the resolution be continued until rescinded.

Seconded by Dr. Harris and carried.

Moved by Dr. Larkin, "That a vote of thanks be extended by the House of Delegates to

"The Supervisors of the County of Onondaga, for the use of the Court House, and Mr. Kelsey, the Superintendent, for his courteous treatment.

"To the invited guests reading and discussing papers in the various sections.

"To Dr. George B. Vincent, for his address at the Annual Meeting.

"To the various clubs who have extended the courtesies of their clubhouse to the members of the Society, Bellevue Country Club, Chamber of Commerce, Century Club, Citizens Club, Knights of Columbus, Masonic Temple Club, Onondaga Golf and Country Club, University Club and Y. M. C. A.

"To the People of Syracuse who have kindly donated their automobiles.

"To the Motor Corps of the Red Cross for the use of their cars.

"To the Onondaga Hotel for the use of their ballroom, and other courtesies extended." Seconded and carried.

Dr. Lytle moved that the time and place for the special meeting of the House of Delegates to be held next Autumn be left to the Council. Seconded and carried.

Dr. Dwight H. Murray presented the subject of insignia for the motor cars of physicians.

Dr. Higgins moved that this matter be referred to the Council. Seconded and carried.

A resolution on prohibition was presented and referred to the Council with power.

Dr. Hull, of Troy, urged that a section on Roentgenology be created.

It was moved and seconded that this matter be referred to the Council. Seconded and carried.

Dr. George F. Cott moved that a vote of thanks be extended to the retiring President, Dr. Halsted, for the efficient and impartial manner in which he had presided over the deliberations of this meeting of the House of Delegates. Seconded and unanimously carried.

As there was no further business to come before the meeting, on motion, duly seconded and carried, the House of Delegates then adjourned.

Floyd M. Crandall, *Secretary*.

MEETING OF THE COUNCIL.

A meeting of the Council of the Medical Society of the State of New York was held in Syracuse on Thursday, May 8, 1919. Dr. Grant C. Madill, President; Dr. Floyd M. Crandall, Secretary.

The meeting was called to order by the President and on roll-call the following answered to their names: Drs. Grant C. Madill, Thomas H. Halsted, Floyd M. Crandall, Dwight H. Murray, W. Meddaugh Dunning, Joseph B. Hulett, G. Massillon Lewis, Albert T. Lytle, George W. Cottis, Luther Emerick, R. Paul Higgins and John H. Pratt.

A quorum being present, Dr. Madill announced the meeting open for business.

The minutes of the last meeting were approved as printed in the State Journal of Medicine, March, 1919.

The President appointed the following special Committee on Public Health of the Greater City of New York: Drs. E. Eliot Harris, Frederick H. Dillingham, Antonio Stella, New York County; Edward C. Podvin, Edward F. Hurd, Arthur J. O'Leary, Bronx County; Elias H. Bartley, Henry A. Fairbairn, J. Richard Kevin, Kings County; Arthur D. Jaques, John H. Barry, Joseph H. Bogart, Queens-Nassau County; William Bryan, John D. Lucey, Edward D. Wisely, Richmond County.

Moved that a Committee on Publication be appointed; seconded and carried.

The President appointed Drs. S. W. S. Toms, Harlow Brooks, W. Meddaugh Dunning, Edward Livingston Hunt and A. Clifford Mercer.

Moved that a Committee on Finance be appointed; seconded and carried.

The President appointed Drs. Harlow Brooks, Henry Lyle Winter and Floyd M. Crandall.

Moved that a Committee to pass upon County By-Laws be appointed; seconded and carried.

The President appointed Drs. Floyd M. Crandall, Albert T. Lytle, R. Paul Higgins.

Moved by Dr. Lytle that Dr. John Cowell MacEvitt be appointed Editor for the ensuing year. Seconded and carried.

Moved by Dr. Higgins that Dr. Floyd M. Crandall be appointed Assistant Editor for the ensuing year. Seconded and carried.

Moved by Dr. Higgins that the Special Meeting of the House of Delegates be held in Albany at the call of the President. Seconded and carried.

Moved by Dr. Higgins that the Annual Meeting be held early in May, 1920, the exact date to be left to the President in consultation with the Committee on Arrangements. Seconded and carried.

Moved, that the Committee on Finance authorize such expenditures as it considers advisable and that the officers, chairmen, and members of committees incur no expenses on behalf of the Society except railroad fares, without the approval of the Committee. Seconded and carried.

Moved, that in order to encourage increase in membership in the State Society, all members who are elect-bership in the State Society, between October 1, 1919, and December 31, 1919, and who shall pay during that period their State assessment, may have the same credited to 1920 provided that they request it. All whose assessments are so credited shall be entitled to malpractice defense from the date of their election, but shall not be entitled to receive the Journal nor Directory for 1919. State assessments so credited shall be immediately forwarded by the County Treasurer to the State Treasurer. Seconded and carried.

Moved, that officers and members of committees upon presentation of proper vouchers may have their railroad fares paid for attending regularly called meetings, provided the bills are presented within sixty days after they have been incurred. Otherwise they will not be paid. Seconded and carried.

Moved, that the delegates to the American Medical Association may have their railroad fares paid upon presentation of proper vouchers on condition that they attend all meetings of the House of Delegates. Bills for such expenses must be presented within sixty days after they have been incurred. Otherwise they will not be paid. Seconded and carried.

Moved by Dr. Halsted that the communication from M. B. Root referred to the Council by the House of Delegates regarding the Therapeutic Value of Alcohol be laid on the table. Seconded and carried.

In accordance with a request received from Dr. W. A. Bastedo, referred to the Council by the House of Delegates, the President appointed Walter A. Bastedo, William A. Groat, and S. W. S. Toms delegates to the United States Pharmacopœial Convention in May, 1920.

Moved by Dr. Higgins that the communication from Dr. M. C. Rose, referred to the Council by the House of Delegates, in regard to a location bureau be laid on the table. Seconded and carried.

Moved by Dr. Halsted that the communication from Dr. Winans in regard to the administration of anæsthetics by internes be referred to the Committee on Legislation to consider and report back to the Council. Seconded and carried.

The President appointed Dr. Marcus B. Heyman, Chairman, and Dr. Edward Livingston Hunt, Secretary, of the Section on Neurology and Psychiatry.

Moved by Dr. Cottis that Dr. Thurman A. Hull, of Troy, be appointed to secure the names of physicians interested in the establishment of a Section on Roentgenology and report back to the Council. Seconded and carried.

Moved by Dr. Lytle that the Medical Society of the State of New York endorse the adoption of a national insignia for physicians' automobiles, and that Dr. Dwight H. Murray be requested to present this resolution to the House of Delegates of the American Medical Association. Seconded and carried.

There being no further business, the meeting adjourned. Floyd M. Crandall, *Secretary*.

Medical Society of the State of New York

ANNUAL REPORTS

1918

PRESIDENT'S REPORT

To the House of Delegates:

Of the 15,000 physicians in New York State about 3,700, or 25 per cent left their practice and homes for military service, while a still larger number gave a large part of their time to the work of medical examiners and on advisory medical boards. This, of course, has resulted in a general confusion and much disturbance in medical practice, just as similar results have occurred in other branches and kinds of profession, business and trade.

When my predecessor in this office, Colonel Alexander Lambert returned from France, where he had been for nearly a year as Medical Director of the American Red Cross, and presided at the meeting of this Society a year ago, he made an urgent appeal for a number of medical men to return with him for needed service in the American Red Cross overseas. It seemed to be my duty to accept the opportunity offered, the result being that half of my term of office, while President of this Society, was spent in France as head of the Medical Intelligence Bureau, and later as Field Director, of the Medical Research and Intelligence Department of the American Red Cross of which Colonel Lambert was the Chief. Because of this absence I was unable to perform that agreeable part of the duties of the President that takes him to the District Branches in the fall of the year when he becomes acquainted with the profession and learns the needs of the Society. As it happened, however, owing to the widespread epidemic of influenza and the large number of members absent in military service, the District Branch meetings were very sparsely attended.

During the year, there have been an unusually large number of deaths among our members. The latest is that of Dr. Frank Van Fleet, who died suddenly in his office in New York, on the 5th of April. Dr. Van Fleet was known among the members of this Society as few members ever have been. For many years he was Chairman of the Committee on Legislation of this Society, both before and since the amalgamation of the two Societies and he was a most efficient Chairman, rendering service of very great value to the profession of this State. At the time of his death he was Treasurer of the Society. His wise counsels will be greatly missed both in the meetings of the Council and in those of the House of Delegates, where his advice and judgment were respected as was that of few others.

Another death of a recent official was that of Dr. W. Stanton Gleason of Newburgh, who died February 3. Dr. Gleason was President of this Society in 1915 and was widely and well known throughout the profession of the State, while he was an active member in the affairs of the Society for a great many years. The absence of these two gentlemen will be felt very deeply at this meeting of the Society.

I desire to express my sincere appreciation of the effective work of the various Chairmen of the Standing Committees, all of whom have done their work, under trying circumstances, in a manner that reflects great credit on the judgment of the House of Delegates in selecting them for their positions. The Chairman of the Committee on Scientific Work has given us a program that has never been excelled, while the Chairman of the Committee on Arrangements has planned well for a big meeting and one that offers unusual success in a branch sometimes neglected, Commercial Exhibits—a very important adjunct to our scientific meeting.

COMPULSORY HEALTH INSURANCE

(Davenport-Donohue Bill)

For four years or more efforts have been made in the Legislature to pass legislation requiring Compulsory Health Insurance among the employees or so called laboring class with their dependent families, the service to be rendered by physicians, dentists, nurses and pharmacists, while the cost of medical and surgical supplies, hospital and dispensary care, cash benefits, funeral benefit, expense of professional service are all to come out of funds collected in premiums from the employees themselves and their employers. The State would administer the business under the direction of the Industrial Commission.

The Medical Society of the State of New York for good and satisfactory reasons, not necessary here to enumerate or dilate upon, has opposed during these years the enactment of these various laws, beginning with the Mills Bill and ending with the Davenport-Donohue Bill of the present session.

Governor Smith, in his inaugural address, the first of this year, urged Compulsory Health Insurance. Senator Davenport in the Senate and Hon. Mr. Donohue in the Assembly introduced identical bills in the Legislature to bring it about. These bills were urged and vigorous campaigns were waged in favor of the Davenport-Donohue Bill by the American Association for Labor Legislation, New York State Federation of Labor, the City Club, Consumers' League and other organizations, chiefly of women.

This Bill, as it was amended from time to time, during the Session, became exceedingly dangerous to the welfare of the future health of the employees, whom the bill was designed to benefit, as well as to that class of professional men and women, physicians, dentists and nurses who were to render the service.

Realizing the dangerous character of the Bill and the powerful elements in support of it, in letters to the Presidents of the County Medical Societies, I urged the importance of acquainting the profession with the menace of the bill and the necessity of their using every effort to block its passage in the Legislature. There was an immediate response throughout the State, telegrams and letters in large numbers being sent the legislators. At the public hearing 350 to 400 physicians came to Albany as delegates, nearly every County being represented, Kings County alone sending about 50 delegates.

The Bill, as it existed in its amended form on March 19, 1919, when a public hearing was granted, would, if enacted, bring about a demoralization and degradation of the medical profession and an interruption to the progress of medicine that was simply appalling. If enacted, it would reduce the profession largely to practising that kind of medicine known as "Lodge Practice," it would have taken away from the individual patient the right to free choice of physicians, have handed over the practice of medicine among 80 per cent or more of the population to the lowest bidder and tended to reduce the profession to a trade or business. So bad was the Bill that at the public hearing, Senator Davenport disclaimed responsibility for many of the objectionable features and said many of the latest amendments were introduced without his concurrence and that he did not stand for the Bill as it then existed. At the same time he insisted on a Compulsory Health Insurance Bill and asked the medical profession to propose constructive criticism and suggestions, such as it believed fair, and stated that he would use his best efforts to meet the best opinion, if of a constructive nature, that the medical profession had to offer.

The hearing showed the strength of the opposition of the united medical profession to the Bill, but it also demonstrated the purpose of the powerful proponents of Health Insurance to persist in the enactment of such a measure.

Since the hearing, further amendments, showing some effect of our opposition to the bill as it was, were introduced, and a strong effort is, at the date of this writing, being made to pass the amended bill.

These last amendments eliminate the dependent members of the employees as insured members, limiting insurance to the employees themselves, though domestic servants, agricultural workers and employees above the standing of foreman are excluded from the benefits of the law.

Free choice of physicians is allowed. The medical profession is recognized through the County Medical Societies and the latter are seemingly given a right to discuss the question of medical compensation with the Industrial Commission, though the power to fix the compensation resides in the commission itself. Establishments are permitted to hire salaried physicians.

The bill has, at this writing, passed the Senate and is before the Assembly where it is to be hoped it will remain, thereby failing of passage in the Legislature this year. The question, however, will be settled, so far as this year is concerned, before the time of our annual meeting.

It seems to me that this society owes it to itself to make a serious study of the question of Health Insurance this year and be prepared to make constructive and practical suggestions as to a sane and workable bill. If we do not do so we cannot expect to receive very respectful consideration in the future by those who are honest in their belief that Compulsory Health Insurance is one of the measures making for the welfare of the people, and who are bound to use every influence to bring it about. The subject is the most important one now before our society, and should be discussed in a broadgauge way during this session of the House of Delegates.

Amendment to Medical Practice Act. Annual Registration.

For several years the Board of Regents of the Educational Department has been endeavoring to have a bill enacted requiring the annual registration of physicians, believing this necessary as a part of its plan to regulate the practice of medicine in this State.

There has been opposition in the profession to the principle of annual registration, believing it unnecessary, an abridgment of its constitutional rights, a bothersome nuisance, and in principle wrong in that it requires the physicians themselves to pay the cost of protecting the public against unlicensed, ignorant and unprincipled quackery.

There is much truth in this contention. On the other hand the present law, by which County Medical Societies are the prosecutors of illegal and unlicensed practitioners of medicine, is entirely inadequate to accomplish its purpose. In the city of Syracuse and County of Onondaga, for example, not a single successful prosecution of any illegal violator of the medical practice act has occurred in many years, and this is typical of the situation throughout the State generally, outside of Greater New York. In up-State counties juries will not or do not convict, the result being that many unqualified and improper persons are practicing medicine illegally to the damage both of the general public and of the medical profession.

In the proposed amendment it becomes the duty of the Attorney General to prosecute, and such penalties and fines are provided that it is believed the State will soon be rid of all persons illegally practicing medicine, because convictions can be obtained, and will be enforced. The local County Society ceases to be the prosecutor, the State Board of Regents becoming responsible for the upholding of the law.

We might be dubious of the effectiveness of the operation of the act did we not have a concrete example of the working of a similar law in the case of the Dental Profession. In the case of this sister profession, a law practically identical with this new medical act has been in operation for two years. Dr. A. R. Cooke, former president of the New York State Dental Society, in reply to an inquiry from me as to their experience, writes, among other things, the following:

"The proposed amendment to the public health law in relation to the practice of medicine submitted in Assembly bill No. 1296 is essentially the same as the registration act included in the bill regulating the practice of dentistry and hence is open to the same criticism as was offered at the time of the enactment of the latter bill.

Annual registration with its penalties for failure to comply with the statute has been in force in the dental law for the past two years and has given general satisfaction.

Little trouble has been had on account of re-registration and most of those who have failed to comply have been notified by the secretary and have had their names placed on a secondary list kept by the secretary for those who might register during the year or at a date too late to appear in the published lists. The published lists serve as a professional list of the State, show who are legal practitioners and give a census of the profession.

Objection was made to the registration and the payment of fees on the ground that the same deprived the practitioner of rights conferred upon him by his license but, considering the present State and Federal narcotic registration laws and licenses, it would seem that the same is not well founded.

Amendments to section 174 provide drastic penalties for infraction of the act and are intended to facilitate the enforcement of the same through the higher courts without an indictment by grand jury which latter course has been found to be impractical in the smaller towns and country districts. The larger fines were provided for in an amendment to the dental act passed in 1917 to meet the cases of illegal men who upon conviction promptly paid a nominal fine of $50 and immediately resumed practice and were ready to pay again when apprehended."

It would seem, therefore, that the dental law, similar to the amended medical act, is operating satisfactorily. The veterinary act, of like nature, is also meeting the approval of the members of their profession.

In addition to the requirement of annual registration the law provides for an extension of the course of medical study of from four years of seven months each to that of four years of eight months each.

The medical profession is burdened with the necessity of making an annual registration in the case of the narcotic laws, both of the State and of the Federal governments. It is believed that arrangements can and will be made whereby one registration will take care of the two now required by the narcotic laws and this new one under the medical practice act. It may be that these registrations can be effected through the machinery of county medical societies, in which case a great deal of objection to these numerous registrations will be removed. The matter is at present under discussion with the Board of Regents, and by the time of the annual meeting a more definite report on this phase of the question can be made.

The council, in meeting, held at Albany on February 26, 1919, endorsed the act as proposed by the Education Department and recommended its introduction in the Legislature.

BUREAU OF MEDICAL INFORMATION.

There will be submitted to you a plan for a Bureau of Medical Information. As things stand today the organized medical profession is without adequate and accurate information on almost any subject that affects the economic or business side of our profession. On scientific questions we are all interested and try to be informed. The excellent papers and programs of our meetings show this. In these days new sociological questions, affecting all the people, the medical profession included, are being constantly introduced into our legislatures. To look out for our own interests we must be ready and prepared to meet these questions as they arise. Many of the new laws are socialistic or paternalistic, and if enacted will change fundamentally our present relationship to the public, to our patients and among ourselves. These laws will doubtless, many of them, be a step in real progress and should be welcomed. If we are to share in the benefit that should accrue to all, it is essential that we be armed with knowledge and information gleaned from the operation of these laws in other countries or states so that we can assist in their construction, opposing when opposition is needed but fortified by facts so that we know what we want, why we want it and how to go about to get it. The obtaining of this information, its filing for future use, its assemblage in such shape that it can be used effectively by those competent to use it, is the business of professional and trained librarians, devoting their whole time to it. Such a bureau requires an office, executive officer, librarian, stenographers, and will cost a considerable amount of money annually for maintenance, if it is to be of any value at all. It will become a great clearing house for all sorts and kinds of information that should be available, not only to the organized profession but to the individual physician. When such a question, for instance, as the present one of Compulsory Health Insurance comes up, with a bureau in operation, information already collected and filed would be immediately available, giving the operation of like laws, in every other country in the world where such a law existed. The details of these various laws, the good and the bad features, the actual experience as it affects the profession, the beneficiaries, etc., would all be here, a record of experience, and would prove invaluable in meeting such arguments, pro or con as might arise. The uses of the bureau would be multifarious and within a very short time it would expand to such an extent that it would prove to be one of the most valuable departments of the organization of the medical profession in the State. Its services could unquestionably be utilized by many other bodies than the State Medical Society and a share in the expense of its maintenance might well be borne by other medical and allied organizations in this State. I hope each member will read carefully the detailed and excellent report of the committee appointed to consider the establishment of a Bureau of Medical Information. I heartily concur in its recommendations.

LEGISLATIVE COMMITTEE.

The present Legislative Committee of the State Medical Society consists of a chairman elected annually by the House of Delegates, together with the chairman of all the legislative committees of the county societies—an unwieldy committee of 60 men, which never meet in conference because of its size and the expense of getting the committee together. As a result, the committee is such in name only, the actual committee consisting of one man, the chairman. There is too much work and too much responsibility for any one man. The position is so important that if the chairman cannot give the time required to its exacting duties, or if he himself is not adapted to the position, the welfare of the whole profession of the State is at stake. An amendment, changing the Legislative Committee so that it consists of three members will come before the House of Delegates and should be passed. This is simply a return to the method employed successfully for many years. It will insure frequent meetings of the committee, a division of labor and responsibility. If the proposed Bureau of Medical Information becomes a fact, a great deal of detail work will be taken from the shoulders of the members of the Legislative Committee, while much will be added to their effectiveness.

The chairman of the Legislative Committee, elected at the last meeting of the House of Delegates, resigned in February of this year, and his place was filled by action of the council authorizing the president to appoint a successor. I asked Dr. James F. Rooney, first vice-president, and for several years previously chairman of this committee, to act as chairman during the remainder of the term. He accepted and has filled the position, one of great responsibility and much labor, with his accustomed energy and efficiency.

Increase the Strength of the County Societies.

Because of the growing importance of economic questions as it affects the medical profession, and because the County and State medical societies are the official bodies, the County Medical Society should be the most important and most attractive medical society in every community.

Many cities and towns have a local Academy of Medicine or other like organization which often meets more frequently and is more largely attended than the County Medical Society. I renew the advice of Dr. Martin B. Tinker who, when president of this society in 1917, urged the merging of local medical societies into the County Medical Society. There are altogether too many local medical societies. The profession would be better off if the number were lessened and the importance and influence of those already recognized as official by the State; namely, the county medical societies were increased.

The Medical Society of the State of New York would be enormously strengthened in every way and to the betterment of each individual member if such concentration of effort were brought about. There are 8,427 members in this society. There should be in the neighborhood of 13,000 to 14,000.

The fight over Compulsory Health Insurance shows the imperative need of increasing our membership so as to include every reputable physician in the State. It should be the business of the officials of the county societies to wage an effective campaign to bring this about through their local organizations.

The profession must be united if it is to exert the influence it should in public health and legislative matters.

In closing, permit me to thank you for the honor conferred upon me in making me the president of this great Medical Society—one of the chief honors in the gift of the medical profession of this country. My sense of responsibility and inadequacy has grown upon me as a fuller realization of the wide-reaching requirements developed as the year has gone by. I am deeply appreciative of the great assistance rendered promptly at all times by the secretary and his able assistant.

Respectfully submitted,

Thomas H. Halsted,
President.

April 15, 1919.

REPORT OF THE SECRETARY.

To the House of Delegates:

In compliance with Section 3, Chapter VI, of the By-Laws, the Secretary submits the following report for the year ending December 31, 1918:

Membership, December 31, 1917	8,209	
New members, 1918	270	
Reinstated Members, 1918	263	
		8,742
Deaths	162	
Resignations	25	
Expelled	1	
		188
		8,554
Dropped for non-payment of dues, December 31, 1918		370
		8,184
Elected after October 1, 1918, and credited to 1919		84

Membership, January 1, 1919	8,268
" " " 1918	8,339
" " " 1917	8,287
" " " 1916	7,940
" " " 1915	7,239
" " " 1914	7,239

On January 21, 1907, the membership of the State Society was 5,857. Today there is an increase of 2,411. During these twelve years there have been 1,219 deaths, 541 resignations, and 20 expulsions, a total of 1,780. Each year a certain number are dropped for non-payment of dues, but before the close of the next year about two-thirds of these pay their dues and are reinstated. The loss from this source from 1907 to date has only been 1,691, an average of 141 a year.

During these twelve years 6,481 new members have been admitted and the membership of the Society is increasing more rapidly than are the accessions to the profession.

The Honor List of Counties whose membership for 1918 is fully paid up is as follows: Columbia, Greene, Lewis, Onondaga, Oswego, Queens-Nassau, Schoharie, Tompkins, Washington, Wayne.

William Stanton Gleason.

An appreciation of Dr. Gleason will be presented by his friend, Dr. Henry Lyle Winter, at a later hour in this meeting. I feel, however, that brief recognition should also be accorded by the Secretary.

Three years ago, Dr. Gleason in his President's Report wrote the following words regarding Dr.

Townsend, who had died a few weeks before. I feel that no more fitting appreciation of Dr. Gleason himself could be presented to you than his own words uttered at that time:

"Paramount to rules and orders, and rising high above business considerations is the tribute we owe to the memory of our late Secretary, the man, and the physician, Dr. Wisner R. Townsend. Encomiums are meaningless to you, his friends, for it was the little unremembered acts of devotion that bound him to you. His winsome personality and adaptability placed him in close touch with our entire membership. Out of the depths of our appreciation we place this laurel wreath of affection to his memory in the archives of this Society."

FRANK VAN FLEET.

The death of Dr. Van Fleet, Treasurer of the State Medical Society, has brought sorrow to physicians the length and breadth of the State. His friends were many, for to know him was to be his friend and hold him in honor. One of the most certain guarantees of character is to be held in honor most by those who know one best. This test Dr. Van Fleet fulfilled. He was held in high esteem in his own county, and served its Society up to its highest office.

In the State Society he was long known and respected, and his influence was State-wide. He was a member of the Joint Committee of Conference, that important body whose strenuous and wise labors resulted in establishing our Society as it is today. As a speaker Dr. Van Fleet was simple, but forceful to a remarkable degree, and his clear judgment was held in the highest respect.

In his profession he stood in the first ranks, and in his specialty was second to none. He was a surgeon in the Eye Department of the Manhattan Eye, Ear and Throat Hospital, Chairman of the Board of Surgeons, and for many years Executive Surgeon. During his last months he devoted much thought and labor to ameliorating the sad condition of soldiers blinded in the fields and trenches of France and Flanders. He had for some time been in failing health, but with heroic spirit continued at his work and died in harness.

His was a useful and faithful life. He left a great heritage, the memory of a well-spent life and an upright character, and to his son he left an honorable and untarnished name.

Respectfully submitted,

FLOYD M. CRANDALL,
Secretary.

April 15, 1919.

REPORT OF COMMITTEE ON FINANCE.

To the House of Delegates:

DR. FRANK VAN FLEET.

The Committee on Finance wishes to express its deep sorrow at the irreparable loss which it has sustained in the death of its Chairman and the Treasurer of the State Society, Dr. Frank Van Fleet, whose wise counsels, sound judgment and devotion to the interests of the State Society were an inspiration to all who worked with him. His death brings a feeling of loss not only to his friends but also to the entire medical profession.

In addition to the Treasurer's report, it seems desirable to draw the attention of the members to a few details. And a comparison of the following tables will show that although some of the years show a deficit, that taking the entire amount received and expended from 1906 to 1918, there has been an excess of income during these years of $4,121.70.

	Bank Balances December 31st	Excess of Income	Deficit
1906	$5,328.19	$3,234.29	......
1907	4,788.88	......	$1,287.37
1908	5,300.30	642.46	......
1909	9,426.79	3,311.63	......
1910	10,096.73	......	479.22
1911	10,608.33	850.85	......
1912	8,617.78	......	1,306.09
1913	9,448.08	879.40	......
1914	9,939.60	......	759.15
1915	11,381.89	1,153.21	......
1916	12,901.44	1,734.22	......
1917	9,063.54	......	2,877.29
1918	8,741.31	......	895.24
		$11,806.06	$7,604.36

Further comparison will also show that although there is a small deficit for 1918, that this deficit has been decreased from $2,877.29 in 1917, to $895.24, a total gain of $1,982.05. This should be most satisfactory when one realizes the heavy increase in expenses in all supplies, including postage and clerical work. No deficit would have occurred if it had not been for the abnormal conditions, which made a decrease in the usual number of new members of over three hundred.

The number of members dropped for nonpayment of dues at the end of the year was small, amounting to three hundred and seventy; one hundred and fifty of these have already paid their back dues and been reinstated, and others will follow in the near future.

Respectfully submitted,

HENRY LYLE WINTER,
FLOYD M. CRANDALL.

April 15, 1919.

REPORT OF THE TREASURER.

FRANK VAN FLEET, *Treasurer,* In Account with THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Dr. Cr.

CASH RECEIPTS YEAR ENDED DECEMBER 31, 1918.

Cash Balance, January 1, 1918		$9,063.54
Directory, 1916	$145.00	
Directory, 1917	1,096.10	
Directory, 1918	2,923.00	
Clerical Work	125.61	
Interest on Deposits	320.72	
Interest on Bonds	90.00	
Sundry Receipts	118.76	
Advertising	6,633.12	
Subscription and Sales	252.57	
Annual Dues, 1916	39.00	
Annual Dues, 1917	926.00	
Annual Dues, 1918	24,354.00	
Annual Dues, 1919	411.00	
Annual Dues, 1920	3.00	
Arrears	96.00	
Annual Meeting	236.36	
		37,770.24
		$46,833.78

CASH PAYMENTS, YEAR ENDED DECEMBER 31, 1918.

Traveling Expense—General	$208.05	
Traveling Expenses—A. M. A.	480.31	
Accountants	100.00	
Carfares	14.05	
Express	29.90	
Treasurer's Bond	12.50	
Exchange on Checks	3.65	
Sundry Cash Disbursements	309.68	
Telephone	141.89	
Stationery and Printing	333.94	
Postage	390.64	
Rent	900.00	
Rent—Safe Deposit Box	5.00	
Insurance	5.70	
Committee on Legislation	469.63	
Legal Expense	9,000.00	
Directory, 1917	115.04	
Directory, 1918	8,724.13	
Journal Expense	264.53	
Journal Salaries	1,442.10	
Journal Commissions	725.34	
Journal Publication	9,157.33	
District Branches	282.18	
Salaries	2,761.27	
Annual Meeting	1,492.76	
Secretary	500.00	
Interest on Bonds Deposited	90.00	
Committee on Medical Economics	132.85	
		$38,092.47
Balance on Deposit with Guaranty Trust Co., December 31, 1918—General	$8,275.84	
Committee on Medical Research	465.47	
		8,741.31
		$46,833.78

ANNUAL DUES, 1918.

County.	*Amt. Paid.*	*County.*	*Amt. Paid.*
Albany	$531.00	Oneida	540.00
Allegany	96.00	Onondaga	666.00
Bronx	996.00	Ontario	228.00
Broome	255.00	Orange	246.00
Cattaraugus	114.00	Orleans	87.00
Cayuga	183.00	Oswego	180.00
Chautauqua	282.00	Otsego	120.00
Chemung	147.00	Queens-Nassau	498.00
Chenango	117.00	Rensselaer	300.00
Clinton	117.00	Richmond	162.00
Columbia	114.00	Rockland	84.00
Cortland	60.00	St. Lawrence	195.00
Delaware	60.00	Saratoga	165.00
Dutchess-Putnam	297.00	Schenectady	336.00
Erie	1,458.00	Schoharie	63.00
Essex	594.00	Schuyler	30.00
Franklin	144.00	Seneca	87.00
Fulton	105.00	Steuben	243.00
Genesee	87.00	Suffolk	303.00
Greene	81.00	Sullivan	99.00
Herkimer	165.00	Tioga	66.00
Jefferson	177.00	Tompkins	198.00
Kings	2,592.00	Ulster	168.00
Lewis	36.00	Warren	60.00
Livingston	132.00	Washington	114.00
Madison	81.00	Wayne	114.00
Monroe	1,059.00	Westchester	801.00
Montgomery	156.00	Wyoming	108.00
New York	8,115.00	Yates	51.00
Niagara	234.00		
			$24,897.00

ADVANCE DUES, 1919.

County.	*Amt. Paid.*	*County.*	*Amt. Paid.*
Allegany	$3.00	New York	39.00
Bronx	24.00	Oneida	6.00
Chenango	75.00	Ontario	6.00
Essex	30.00	Sullivan	3.00
Erie	3.00	St. Lawrence	15.00
Franklin	69.00	Westchester	12.00
Herkimer	78.00		
Kings	51.00		$414.00

ADVANCE DUES, 1920.

County.	*Amt. Paid.*
Essex	$3.00

DIRECTORY ACCOUNT.

Expenditures.

Postage	$637.88	
Stationery and Printing	165.00	
Delivery	521.25	
County Clerk's Fees	5.50	
Salaries	2,384.72	
Commissions	563.95	
Printing and Binding	4,447.83	
		$8,726.13

Income.

Advertisements	$2,182.00	
Sales	741.00	
		$2,923.00
Cost of Directory		$5,803.13

Dr. REPORT OF THE TREASURER—*Continued* Cr.

JOURNAL ACCOUNT, YEAR ENDED DECEMBER 31, 1918.

Income.

Advertising	$7,525.80	
Subscription and Sales	251.57	
		$7,777.37
Cost of Journal		4,719.23
		$12,496.60

Expenditures.

Publication		$9,125.83	
Expense		254.76	
Salaries	$1,442.10		
Commission	1,461.69		
		2,903.79	
Discount		212.22	
			$12,496.60

BALANCE SHEET, DECEMBER 31, 1918.

Assets.

Current Assets:		
Cash in Bank	$8,741.31	
Petty Cash	1.02	
		$8,742.33
Accounts Receivable		239.35
Inventory:		
Directory Catalog	$250.00	
Directory, 1918	350.00	
		600.00
Trust Funds:		
Union Dime Savings Institution, Lucien Howe	$442.55	
Union Dime Savings Institution, Merritt H. Cash	368.66	
Title Guaranty Trust Mortgage Certificates	2,000.00	
Liberty Bonds	500.00	
		3,311.21
Fixed Assets:		
Furniture and Fixtures		454.60
		$13,347.49

Liabilities.

Annual Dues, 1919-1920	$417.00		
Committee on Medical Research	465.47		
		$882.47	
Lucien Howe Prize Fund	2,192.55		
Merritt H. Cash " "	1,118.66		
		3,311.21	
			$4,193.68
Surplus:			
Balance, January 1, 1918	$10,049.05		
Excess of Expenditures for1918	895.24		
Balance, December 31, 1918			9,153.81
			$13,347.49

Respectfully submitted,

BAKER, VAWTER & WOLF,
GEO. D. WOLF,
Certified Public Accountants.

INCOME AND EXPENDITURES, YEAR ENDING DECEMBER 31, 1918.

Income.

Arrears of Dues	$1,056.00	
Dues, 1918	24,864.00	
Interest on Deposits	320.72	
Clerical Work	125.61	
Directory, 1916	145.00	
		$26,511.33
Excess of Expenditures		895.24
		$27,406.57

Expenditures.

Expense	$1,027.81	
Telephone	121.25	
Stationery and Printing	334.14	
Postage	335.04	
Rent	900.00	
Insurance	5.70	
Committee on Legislation	469.63	
Salaries	2,761.27	
Legal Expense	9,000.00	
Annual Meeting	1,256.40	
District Branches	282.18	
Directory, 1917	91.94	
Directory, 1918	5,451.13	
Secretary	500.00	
Committee on Medical Economics	132.85	
Agreement Expense	18.00	
Cost of Journal	4,719.23	
		$27,406.57

INCOME AND EXPENDITURES, YEAR ENDING DECEMBER 31, 1917.

Income.

Arrears of Dues	$795.00	
Dues, 1917	24,753.00	
Interest on Deposits	443.44	
Clerical Work	156.54	
Directory, 1915	107.50	
		$26,255.48
Excess of Expenditures		2,877.29
		$29,132.77

Expenditures.

Expense	$966.01	
Telephone	121.20	
Stationery and Printing	446.66	
Postage	265.95	
Rent	900.00	
Insurance	5.70	
Salaries	2,453.96	
Committee on Legislation	678.56	
Legal Expense	8,400.00	
Annual Meeting	1,627.58	
District Branches	415.73	
Directory, 1916	246.17	
Directory, 1917	6,352.81	
Secretary	500.00	
Committee on Medical Economics	52.37	
Agreement Expenses	879.97	
Cost of Journal	4,820.10	
		$29,132.77

REPORT OF THE COUNCIL.

To the House of Delegates:

The Council of the Medical Society of the State of New York begs leave to present the following report:

During the past year meetings have been held on the following dates:

May 23, 1918, in Albany. Minutes will be found in the New York State Journal of Medicine, Volume 18, No. 7, page 294.

December 14, 1918, in New York City. Minutes will be found in the New York State Journal of Medicine, Volume 19, No. 1, page 29.

February 26, 1919, in Albany. Minutes will be found in the New York State Journal of Medicine, Volume 19, No. 3, page 109.

Respectfully submitted,

Floyd M. Crandall,
Secretary.

April 15, 1919.

REPORT OF THE COMMITTEE ON PUBLICATION APPOINTED BY THE COUNCIL.

To the House of Delegates:

The Council at the meeting held in Albany on May 23, 1918, appointed the following Committee on Publication for the ensuing year:—Drs. Samuel W. S. Toms, W. Meddaugh Dunning, Edward Livingston Hunt, A. Clifford Mercer and Frank Van Fleet.

At the same meeting Dr. John Cowell MacEvitt was appointed Editor, and Dr. Floyd M. Crandall, Acting Editor, owing to Dr. MacEvitt's absence in France.

Journal.

The Journal for 1918 has been issued regularly, the edition being about the same as in 1917. The cost to the Society of $4,719.23, shows a saving of $100.87 over 1917. This decrease was partly accomplished through the reduction in the size of the Journal of about 164 pages, which reduced the cost of publication, in spite of an increase over the previous year in all other expenses, including postage and the cost of paper and labor.

The receipts from advertisements were not quite as satisfactory as the previous year, there being a decrease of $320.39, due probably to war conditions. There was a very slight increase in sales. All moneys due the Society were collected, and there were no doubtful debts to be charged off.

Directory.

In order to meet the grave problem which confronted all publishers during the early part of last year owing to the continual increase in the cost of paper and labor, the Committee on Publication at a meeting held on March 15, 1918, passed the following resolutions:

"That the 1918 Directory be published as usual but that in this Directory only the names and data of the physicians of New York State, New Jersey and Connecticut, and the street list be included. The alphabetical list, list of Societies, Hospitals, Dispensaries, Examiners in Lunacy, Board of Health notes, etc., to be omitted from the 1918 Directory."

The carrying out of this resolution saved the Society $549.68 over the previous year, the actual cost to the Society of publication being $5,803.13 as against $6,352.81 in 1917. This saving would have been much larger if it had not been for the increased cost of all supplies, including over $300 in postage, as there was an actual saving in the printing of the Directory of $1,503. This saving was accomplished not only by reducing the size of the Directory, but also by publishing a slightly smaller edition, which was made possible through the war conditions which reduced the number of new members admitted into the Society by over three hundred.

The increase in receipts from advertisements, although very slight, were exceedingly satisfactory, as they showed that in spite of the fact that many of the old advertisers, including those on the cover pages, refused to renew; that all were replaced by new ones, and there was no loss in revenue on this account.

The cost of publication for the comng year of both Journal and Directory will be increased, as the increase in the cost of labor during the past year, an increase which is not unlikely to continue, will not be offset by the decrease in the cost of paper, which as yet is very slight.

Also for the first few months of the year it has been found necessary to issue a larger Journal in order to publish all papers read at the last Annual Meeting, before the next meeting in Syracuse, as well as other matters which are of importance to the Society.

The advertising receipts for the first three months have been excellent, but it is impossible to say at the present time whether they will continue so or drop off as they did during some of the months in 1918.

Respectfully submitted,

S. W. W. Toms, *Chairman.*

April 15, 1919.

REPORT OF THE COMMITTEE ON ARRANGEMENTS.

To the House of Delegates:

The Committee on Arrangements hereby presents a preliminary and partial report.

The Onondaga Hotel has been chosen as headquarters for the annual meeting of the Medical Society of the State of New York for the year 1919.

The House of Delegates will meet in the ball room of the Onondaga Hotel at 3 P. M., May 5, 1919. An evening session will be held in the same place on the same day and an early morning session will be held for the election of officers and such other unfinished business as may lie before the House on Tuesday, May the 6th.

The general public meeting of the Society will be held in the Auditorium of the First Baptist Church Tuesday evening, May the 6th, at 7:45.

The meeting will be called to order by the President and the following programme will be followed: First, calling the meeting to order by the President. Second, Address of Welcome by Dwight H. Murray, M.D., Chairman of the Committee on Arrangements. Third, Organ recital by Prof. Charles M. Courboin. Fourth, Address of Welcome by The Honorable Walter R. Stone, Mayor of the City of Syracuse. Fifth, Address by President Thomas H. Halsted, M.D. Seventh, Oration by George B. Vincent, Ph.D., President Rockefeller Foundation.

All Sections will meet in the County Court House two blocks from the general headquarters.

The registration booth will be in the Lobby of the Court House.

A bureau of information will be connected with the registration booth.

A bureau of information will be provided for both men and women in the lobby of the Onondaga Hotel.

One of the best exhibits ever held in connection with the State Society will be located in Assembly Hall on the first floor of the Court House.

The College of Medicine will have an exhibit taken part in by Prof. Henry W. Stiles of the Anatomical department; Prof. H. W. Steensland of the department of Pathology in connection with which the Onondaga Morgue will be open for inspection; this morgue is said to be one of the best in all its appointments in this State.

On Wednesday evening a reception will be given in honor of the President and President elect at the Onondaga Hotel, following which a banquet will be held for the men and a buffet dinner for the ladies; tickets for this banquet will be $5 each and will be on sale by any member of the Committee also at the bureau of information and registration.

A list of Hotels with rates and a list of the principal garages have already been published in the March number of the *State Journal* and may be found on the general programme.

The Committee on Arrangements for the entertainment of women under the Chairmanship of Mrs. Thomas H. Halsted have arranged the following programme: Tuesday afternoon, May 6th, automobile drive and tea at the residence of Mrs. T. H. Halsted; Wednesday afternoon, May 7th, luncheon at the Bellevue County Club; Wednesday evening, May 7th, buffet supper for the ladies, preceded by a reception to the President and President-elect.

Respectfully submitted,

DWIGHT H. MURRAY, *Chairman.*

April 15, 1919.

REPORT OF THE COMMITTEE ON SCIENTIFIC WORK.

To the House of Delegates:

Your Committee on Scientific Work has the honor to submit the following report of its activities:

A large part of the work of this Committee was naturally carried on by correspondence between its Chairman and the officers of the various sections. There was but one formal meeting of the Committee. This was held at the rooms of the Society in Manhattan on November 25, 1918, and the minutes are appended.

A meeting of the Committee on Scientific Work was held at the State Society rooms on Monday afternoon, November 25th, 1918.

Present: Dr. Parker Syms, Chairman; Malcolm Woodbury, Chairman, Section on Medicine; Arthur W. Booth, Chairman, Section on Surgery; Frank vander Bogert, Chairman, Section on Pediatrics; James F. McCaw, Chairman, Section on Eye, Ear, Nose and Throat; Thomas P. Farmer, Secretary, Section on Obstetrics and Gynecology; John R. Williams, Secretary, Section on Medicine; Arthur J. Bedell, Secretary, Section on Eye, Ear, Nose and Throat; Willard J. Denno, Secretary, Section on Public Health, and Floyd M. Crandall, Secretary of the State Society.

The meeting was called to order by the Chairman at 2:30 P. M.

Moved, seconded and carried that Dr. Crandall be made Secretary of the meeting.

Dr. Woodbury and Dr. vander Bogert and Dr. McCaw presented an outline of their plans for the Sections on Medicine and Pediatrics, and Eye, Ear, Nose and Throat.

Owing to the Chairman of the Section on Obstetrics and Gynecology being in service the plans for that Section were presented by the Secretary, Dr. Farmer. Dr. Denno, Secretary of the Section on Public Health, gave the outline for that Section.

Dr. Syms requested the Chairmen to have the preliminary programs as here presented, written out and sent to him within the next ten days.

Dr. Booth, Chairman of the Section on Surgery, stated that when he was in Washington, he had met Lieut.-Col. Osgood, who offered to arrange a program on "War and Reconstructive Surgery." This program which would be one of great interest, would take an entire day and would have to be carried out exactly as arranged by Dr. Osgood.

In the general discussion which followed, the advisability of holding this meeting on Wednesday was questioned, as it would probably prove such a drawing card that it would materially detract from the attendance at the other Sections and interfere with the plans already made. It would also place the Chairmen in an awkward position with their readers, among whom were many men of prominence, and guests from other states.

Dr. Crandall stated that the introduction of a similar program into the last meeting of the American Medical Association had proved very unsatisfactory, and had greatly detracted from the success of the meeting, virtually breaking up many of the special features arranged by the different sections.

Dr. Williams said that owing to the interest that would be aroused by Dr. Booth's programs, it would be as valuable on Thursday as on Wednesday and would draw an equally large attendance. It would also have the additional value of holding men over Thursday, instead of their returning home before the meeting was over, which was likely to happen unless there was a strong program for Thursday.

Dr. Williams moved that the Section carry out their programs as arranged on Tuesday afternoon and Wednesday morning, and that the program on "War Surgery" be held on Wednesday afternoon.

After some discussion Dr. Williams withdrew his motion.

Moved, seconded and carried that the program on "War Surgery" be held on Wednesday.

Dr. Crandall drew attention to the importance of grouping together as far as possible all papers which would require lanterns, and also stated that it would be necessary for him to have all programs sent to him by January 15th, in order that they might be published in the February issue of the JOURNAL.

There being no further business, the meeting adjourned at 4:30.

Subsequent to this meeting a slight change in the program was made, the Chairman of the Section on Surgery staging the session on War and Reconstructive Surgery for Thursday instead of Wednesday. It was thought by many of the Committee that this change would be a distinct advantage to the whole meeting.

At this meeting all the sections were represented by their Officers, and each section reported progress as to its program.

At this meeting the general policy and plans for the scientific sessions were discussed.

The policy of the Committee has been to maintain as far as possible the Section idea. It is the sense of this Committee that the holding of Section Meetings in the various specialties has been a distinct advance in the method of conducting our meetings.

The Officers of each Section have performed satisfactory and efficient work and your Chairman feels that the result has been the production of an excellent program for the coming meeting.

As you are all familiar with this program a copy of the same is not herewith submitted.

This committee has not made arrangements for reporting the discussions which are to take place in the various Sections because the Finance Committee of the Society has decided that it would be unwise to make an appropriation for the necessary reporters this year. The Chairman of one of the sections has signified his intention to have this matter arranged by the members of his section, if he can do so. Possibly other section Chairmen may take similar action.

The Chairman of this Committee was fortunate enough to secure Doctor George E. Vincent as our public speaker. Doctor Vincent, as President of Rockefeller Foundation, is naturally an authority on many subjects which intimately concern the medical profession. His scholarly attainments and his well known eloquence as an orator, make us feel assured that we shall have an inspiring address from him at our public meeting on the evening of Tuesday, May 6th.

Trusting that the acts of your Committee meet with your approval, we are respectfully submitting the above report.

PARKER SYMS, *Chairman.*

April 15, 1919.

REPORT OF THE COMMITTEE ON LEGISLATION.

To the House of Delegates:

On February 27, 1919, the undersigned was appointed acting chairman of the Committee on Legislation, vice Dr. Frederic C. Conway, resigned.

The bills that had already been introduced in the Legislature which affected the medical profession had already been considered by Dr. Conway and the proper action taken thereon.

These bills and those introduced subsequently may be divided into four classes:

1. Those affecting the medical profession, especially as regards medical education.
2. Those relating to Public Health and administrative Public Health policies.
3. Those relating to licensure of members of various cults.
4. Those relating to so-called "Social Insurance."

In the first class the most important bill is that providing for the annual registration of physicians, which is now in the order of third reading in the Assembly. This bill has the support of the Educational Department of the State of New York and of the Health Department of the State, and if previous experience with a similar bill affecting the dental profession is any criterion, will do more to save the public from imposition by quacks and impostors of various sorts than any other measure. Two other bills affecting preliminary and professional education after hearing before the committee were not reported. A third bill, introduced by Mr. Klingmann, which permitted any person practicing so-called "Health System" to be licensed upon application by the Secretary of State without requirement of any preliminary or professional education whatsoever, was also killed in committee.

Under the second heading are comprised the bills affecting especially the newly instituted department of narcotic drug control. Upon these bills the medical society took no stand because of the fact that it is unimportant to the profession how this law will be administered; it is purely a matter of administrative State policy. A bill similar to the New York City ordinance, requiring registration by the Department of Health of all proprietary medicines was not reported from committee. A similar fate befell another bill which purported to make the giving and delivery of any narcotic drug to a child under the age of sixteen a felony instead of, as it is at present, a misdemeanor. This bill was supported by the Society but was opposed by the pharmacists, and has not been reported.

Under the third heading falls the so-called "Chiropractic Bill," which was defeated in the Judiciary Committee by a vote of eight to four. It is now in the hands of the Committee on Rules in the Assembly and it is unlikely that it will be reported. It is improbable of passage. Recognition must be taken of the fact that a continuous systematic and concentrated effort has been made by the so-called "Chiropractors" to secure legislation which will give them a standing under the law, and that this effort has been carried on by a very accomplished and very clever lobbyist, a former clerk of the Assembly, who apparently has under his control the expenditure of large sums of money. This legislative agent has, of course, taken a very active part against the medical registration bill because he sees therein the words of doom spelled for his clients.

The most important measure in the fourth group is the measure for the institution of a system of Compulsory Sickness Insurance. This bill has been many times amended and is not more satisfactory, in the opinion of your chairman, than it was in its original form. It is not unlikely to pass the Senate but will probably not pass the Assembly. A very subtle and continuous propaganda is being carried on, to create in the mind of the people that legislation of this sort is inevitable, and which is very similar to the same type of pro-German propaganda that this country passed through during the war; this is an attempt to undermine the morale of opponents by creating the psychological attitude of defeat. In the opinion of your chairman this attitude is not true; the passage of this sort of legislation is not inevitable, and it is believed that the proponents of this legislation realize that they must pass their legislation at this session, because it is not impossible that the reaction against all forms of socialism and communism, of which this is the second step in the entering wedge, will be utterly rejected by the American people. Your chairman is still convinced that the only attitude for the medical profession to take is that of "no compromise." This does not preclude the taking of proper precautions for the protection of the public and secondarily of the medical profession in the event of this bill's passage. The taking of these precautions, however, does not in any way, or at least should not in any way, affect the general attitude of the Society opposing the legislation upon the broad principle of lack of proof, either of its necessity in America or of accomplishment of purpose that it pretends to accomplish.

The proponents of this legislation have endeavored to secure their end not by proving the basis of their argument but by assuming them in the face of facts. They have and are now publicly proclaiming that the medical profession is opposing this Act upon the one ground that it will affect their income and endeavoring in this way to throw discredit upon all opposition. The Insurance Act in Great Britain has proven a failure. The Insurance Act in Germany has broken down. It is an uneconomical, an expensive and wasteful measure which, in the opinion of your chairman, whose opinion is entirely in agreement with that of Dr. Brend, does not and can not accomplish the purpose pretended. Brend's opinion and his study of the English and German Acts appear in his book, published in 1917, under the title "Health and the State."

There are two forces within the Society in relation to this matter. First, a small number of very influential and very active men, who favor this legislation openly, and another small number who are apparently neutral, but also secretly in favor; and, secondly, the very large majority of the profession who are openly against any measure of this sort.

Your House of Delegates, then, is faced with the problem of settling this matter definitely as was recommended by me four years ago and of ceasing to pursue the policy of procrastination and opportunism which has been the policy of the Society upon this subject, up to this time.

The Legislature still being in session a further report will be made to the House of Delegates at its annual meeting.

Respectfully submitted,

James F. Rooney, *Acting Chairman.*

April 10, 1919.

REPORT OF THE SPECIAL COMMITTEE ON THE ESTABLISHMENT OF A BUREAU OF LEGISLATIVE INFORMATION.

To the House of Delegates:

Your special committee, appointed by the president on December 14, 1918, to report on the feasibility of establishing a bureau for the study of legislative questions affecting the medical profession, desires to present the following report:

This committee originally consisted of five members: Messrs. H. L. Winter, of Cornwall; Frank Van Fleet, of New York; J. M. Van Cott, of Brooklyn; F. C. Conway, of Albany, with George W. Kosmak, of New York, as chairman. The committee is very glad to acknowledge herewith the very great help and coöperation of Dr. F. E. Sondern, to whom much of the credit must be given for the elaboration of the more simple scheme suggested in the resolution for the establishment of a legislative bureau and adopted at the last annual meeting of this body.

Your committee found and concluded that a more extensive organization was demanded by the needs of the situation and have, therefore, incorporated in their report such proposals.

We beg to submit to you, therefore, a scheme for the creation of a "Research Bureau of Public Health Legislation" and ask for the same your careful consideration and, we trust, your approval.

1. Purposes and Needs. The system of observing legislation directly or indirectly affecting the medical profession is through the medium of standing committees in each county and in the State organizations. Their function is to report on such bills to their respective organizations, labelling them with their approval or disapproval. In addition, through the agency of the chairman of the State Committee on Legislation, presentation of such views may be transmitted to the Legislature. The character of the majority of such measures has been to the detriment of the profession and the work of legislative committees has, therefore, been largely of a combative and obstructive nature. Constructive legislation by such committees has not been attempted nor has any influence in this direction been developed by the organized profession of the State. Moreover, the ability of most medical men, whether members of such committees or not, to properly analyze and comprehend the many medical bills emanating from the Legislature, is doubtful. This requires special training, particularly legal, in order to separate the good from the bad, and to study effectively the provisions of a proposed measure and their effect on the profession. This lack of effective opposition to inimical legislation is becoming increasingly evident during recent years, and we find references to the same in the annual reports of the legislative committees of both State and County societies and also among individual physicians. Moreover, requests for endorsement of, or protest against, certain measures are frequently received from various sources, in which we, as physicians, should be interested, and yet there is no effective way in which this can be accomplished. Moreover, the admission must also be made that the legislature cannot be made to feel the weight of the combined medical opinion of the State because there is no well-defined procedure or agency by which physicians can be interested directly either as individuals or through their county societies, nor any satisfactory way in which their sentiments can be transmitted through a central agency to those who should be reached by these opinions. Those of the profession who may be deputized to appear at hearings in Albany are often selected at random and while probably sincere in their utterances, are not methodical in procedure nor sufficiently well versed in their subject to present convincing arguments to a legal tribunal. As the profession has in but few instances appeared in support of proposed legislative measures, its continual opposition has created an impression in which selfish interest seems to occupy a leading part. This may be a very unjust, yet perfectly justifiable accusation. It would seem, therefore, that the interests of the medical profession in this State require that some steps be taken to correct this situation. It is believed that a centrally organized bureau, properly equipped and officered, would best meet the demands of the situation. Although a departure from custom, the increasing importance of public health and allied legislation, would seem to justify a reform in our previous methods of studying legislation, so that physicians as a class might become better acquainted with the subject matter of proposed legislative enactments which may be often of vital interest to them and could, moreover, make the weight of their opinions felt when necessary. It is believed that a movement of this kind could be appropriately inaugurated by the representative medical societies of the State, combining with other agencies in the manner about to be described. However, in any proposition for the establishment of a legislative bureau by the State Medical Society, two serious difficulties at once become evident; first, the odium attached to a paid legislative agent or "lobbyist" and second, the prohibitive expense. The committee believes that both of these objections can be satisfactorily met and a working organization created which will be in position to assume the burden and responsibilities of watching medical legislation for the benefit of the entire profession of the State. We recommend moreover that if

established the scope of such a bureau be extended to include other bodies as contributing members, both lay and medical, and likewise individuals who are interested in public health legislation and will add prestige and efficiency as well as financial support and perhaps relieve the profession of the odium of a paid lobby.

The following plan in outline is, therefore, submitted for your consideration and, we trust, approval. It may require further study and modification in detail, but a beginning ought to be made and an organization created to function before the next session of the legislature, January 1, 1920.

2. Organization.

It would appear desirable to organize the proposed "Bureau" on the following basis, with the duties of the various constituent bodies and officers, as briefly stated.

Executive Council of the Bureau: Shall consist of five physicians, constituted as follows: The president of the Medical Society of the State of New York, and a member to be elected by the council of that society, the chairman of the Public Health Committee of the New York Academy of Medicine; a member to be appointed by that committee, both of whom shall be members of the State society, and a fifth member, to be known as the Director, to be selected by them. The president of the Medical Society of the State of New York and the chairman of the Public Health Committee of the New York Acedemy of Medicine shall serve during the terms of their office, the appointed members for one year, and the director at the pleasure of the other members.

Duties: To appoint the counsel of the bureau and the Advisory Council of the Bureau.

Advisory Council of the Bureau: To consist of the members of the Executive Council ex-officio, and as many of the following as they may elect: Members of the medical and other professions, and laymen who have concerned themselves with legislative movements of a public health character, representatives from medical and allied societies and institutions.

Duties: To act in an advisory capacity or as official representatives whenever requested by the Executive Council and at the request of the Executive Council to assist in proper and dignified propaganda when essential and in such other ways which may be necessary to promote the efficiency of the bureau. To develop a set of by-laws for the conduct and government of the bureau.

Director of the Bureau: To be a member of the Executive Council and to be appointed by the other members of that body.

Duties: To be the executive of the office of the bureau, to direct the systematic carrying out of all the functions of the bureau, and to employ the personnel of that office.

Counsel of the Bureau: To be an attorney, preferably one who has had experience in medical and public health law. To be appointed by the Executive Council, who shall decide on a proper retainer to secure his prompt and full attention to all matters in which his assistance is required for the efficient conduct of the bureau.

Duties: To study all proposed legislation concerning physicians, public health and preventive medicine and to write a clear report outlining what the proposed laws intend. To prepare, when necessary, a comprehensive study of a proposed measure and to transmit this presentation of the subject to the Executive Council, to the advisory Council or to those selected to present the opinion of the bureau to the legislators or the Governor. To perfect methods for the introduction of constructive legislation and for the repeal of inimical laws or sections of laws. To otherwise assist in the management of the bureau in order to promote its usefulness and efficiency.

Bureau Office: It is recommended to have the office of the Bureau in the City of New York and preferably in the New York Academy of Medicine building for the following reasons: Owing to the size and importance of the city, a large number of the Advisory Council of the Bureau will probably reside there. Suitable director and counsel as well as needed financial support are more easily secured than elsewhere. The Academy of Medicine will probably offer the bureau space without rental. The library of the Academy in the building and the proximity of the Public Library of the city, and the Bar Association Library will facilitate the work of the bureau.

Functions: To keep on file a ready reference index of all laws and reference books on laws concerning public health, medical practice and preventive medicine in the civilized world and where they can be obtained.

File of important proposed laws in other States of the Union which may have a bearing on bills introduced or to be introduced in the current session of the New York State Legislature.

File of bills to be obtained as soon as introduced in the Legislature of New York or Congress, to be promptly studied by the counsel and a brief written on the same for argument at hearings before committees of legislators or the Governor if necessary. In this way those interested in the proposed legislation can easily completely inform themselves of exactly what the law intends, what existing laws are enhanced or violated and what the experience has been with a similar law in other States or countries.

Perfecting machinery for the construction of laws in the interest of public health and preventive medicine and for the repeal of existing inimical laws or sections of laws.

Bureau of information concerning existing public health laws available to societies, legislators and others properly interested in the welfare of public health.

Press agency for dignified propaganda in the name of the bureau in the interest of proposed public health legislation or in opposition of proposed laws detrimental to public health and preventive medicine. Such other activities within the scope of the bureau as may suggest themselves.

Funding. It is estimated that a thoroughly efficient bureau, created approximately on the lines proposed, will require an annual expenditure of about $10,000. The parent organizations and others represented on the council of the bureau should contribute to the support of the undertaking to the best of their ability, the balance can be obtained by private subscriptions.

Comments.

1. The bureau might easily undertake the work of promptly keeping the legislative committees of county societies or others informed on legislative matters of interest to them, might assume their functions if desired and might expect annual subscriptions for this or similar service.

2. Other medical societies in the State might be asked to contribute to the moral and material support of the bureau.

3. Hearings might be arranged giving members of the profession and others an opportunity to express their views on proposed legislation with the idea that the consensus of opinion will be transmitted by the proper representatives of the bureau to the committees of legislators or the Governor.

4. An annual report on Public Health Legislation could be prepared easily from the records of the bureau and its publication might pay for itself.

In conclusion, attention is again called to the tentative character of these proposals. As a radical departure from custom, careful consideration should be extended to them, nevertheless, a beginning must be made to change a procedure which is no longer practical or efficient and which the welfare of the medical profession demands must be viewed from different standards than have hitherto prevailed. It is, therefore, in a spirit of progress and good will that this report is respectfully submitted,

George W. Kosmak, *Chairman,*
Henry Lyle Winter,
Joshua M. Van Cott,

April 15, 1919.

REPORT OF THE COMMITTEE ON MEDICAL ECONOMICS.

To the House of Delegates:

Your Committee on Economics has continued to pursue the study of Health Insurance and of State Medicine during the past year.

Health Insurance bills which have been introduced into the Legislature, the Davenport bill in the Senate and the Donahue bill in the Assembly, have been essentially the same as the Nicoll bill of last year.

As was apparent from the manner in which health insurance bills were amended by their proponents that the costs of the administration of the medical provisions were under constant consideration, your Committee thought it advisable to provide itself with first-hand cost data. As direct inquiry obtains the most satisfactory results the following questionnaires were circulated:

Questionnaire No. 1.

Sent to Physicians

1. How many years have you been in practice?......
2. Do you practice a specialty?....................
3. If a specialist, is your whole time, or only a part of it devoted to special work?...................... How much of your income comes from general and how much from special work?.....................
4. What is your gross income (from your practice only)? ....
5. What are the expenses of your practice (not your personal expenses)?................................
6. How many hours weekly do you give to hospital or dispensary work or to teaching for which you receive no compensation?............................

Questionnaire No. 2.

1. Age.......... 2. Sex..........
3. Education: Please indicate the degree of education by a cross placed opposite the following divisions: Elementary School......; Intermediate School......; College......; Professional School......; Correspondence School.......
4. Married, Widow, Widower, Single. (Cross out words not required.)
5. Number of dependents: Adults................ Children...........................
6. Number of partial dependents (those members of your family who are partially self-supporting). Adults.......................; Children.............
7. Kind of work which you do....................
8. Did you have to learn the trade?............... If so, how long an apprenticeship did you serve?......
9. Average daily pay.............................
10. Time lost during the past year because of trouble connected with your employment over which you had no control?.......................................
11. Time lost during the past year through acts of your own, other than sickness......................
12. Time lost during the past year because of sickness: (a) your own illness........................; (b) illness in members of your family...............
13. What were your expenses, either contracted for or paid, because of sickness?......................

14. Were patients attended at your home or in a hospital? ....

15. If hospital treatment was received, how many days of free treatment were received?................

16. How many surgical operations were performed at the hospital, either entirely without charge or included in the regular charges of the hospital?...............

17. How much money did you pay out during the year for nurses?................, drugs?.............., necessary supplies for the sick room?................, crutches, braces, eye-glasses, etc.?....................

18. How much did you expend for dental work during the year?..................................

19. Did you receive any free dental services?........

20. Do you live in an apartment or a whole house? ....

21. If an apartment, how many families in the house? ....

22. What are the sanitary arrangements?........... ....

23. If modern plumbing is installed, is it connected with the city sewer or a private cesspool?.............

24. Are you suffering from tuberculosis?........... Cancer?.......... Epilepsy.......... Insanity?...... Severe nervous disease?.............. Chronic kidney disease?.................

25. Is any member of your family suffering from any of the above diseases?............ Which?..........

26. Name, as far as possible, the diseases with which you or members of your family have been afflicted during the year?...

The responses to Questionnaire No. 1 were very gratifying to the Committee because they indicated a widespread interest on the part of the profession in the medical provisions of health insurance legislation, and at the same time supplied sufficient data for its purposes. This questionnaire has been completed and evaluated, and the Committee is in possession of the desired information.

Questionnaire No. 2 which was sent to the manufacturers has not been completed.

It is the opinion of your Committee that the medical provisions of all health insurance bills so far presented fail to provide for proper medical care of the sick and efficient supervision of the public health, and do not safeguard the interests of the medical profession. We advise, therefore, the continued and united opposition of the society to these measures.

In order that the attitude of the society should be most influential a State-wide effort to increase membership is advised. Every legally qualified, reputable physician should be urged to join the society.

Your committee finds that the complexity of social conditions incident to the rapid industrial growth through which the country is passing has produced a necessity in some quarters for specific changes in medical practice and the application of public health measures. The proponents of health insurance propose to meet those conditions through that medium. After considerable study your Committee, as previously stated, is satisfied that the desired conditions cannot be met by the medical provisions of a health insurance law.

Your Committee urges the necessity of the formation by physicians of some plan to meet existing conditions. We believe that this can be done satisfactorily through the medium of State medicine, which should include the establishment of diagnostic clinics and laboratories at convenient points, and also a system of investigation and correction applied through the medium of the State Department of Health or some other central body which will work most effectively in the prevention of disease.

That some plan satisfactory to the whole profession may be evolved we urge that each County society be advised to establish a Committee on Economics to coöperate with the State Committee.

Respectfully submitted,

HENRY LYLE WINTER, *Chairman.*

April 15, 1919.

REPORT OF THE COMMITTEE ON MEDICAL RESEARCH.

To the House of Delegates:

The committee on Medical Research desires to report that during the session of the Legislature of the State of New York the usual measures to regulate animal experimentation are being attempted. "An act to amend the education law in relation to experimentation upon living animals in the common schools of the State" and "An act to prevent cruelty by conferring upon the Board of Regents of the University of the State of New York the power of supervision of experiments on living animals" were introduced in the Senate by Mr. Boylan and referred to the Committee on Judiciary.

A hearing was appointed before the Judiciary Committee on April 9, but owing to the practically continuous session of the Senate on that day it was not held. Men eminent in medical teaching, a representative of the Biological Teachers Association and others interested were present in Albany at the appointed time. A number of briefs were filed with the chairman of the committee.

It is probable that the proposed measures will not be enacted.

Your committee is indebted to Dr. F. S. Lee, Dr. Simon Flexner, the Biological Teachers Association and others for their earnest coöperation.

Respectfully submitted,

FREDERIC E. SONDERN,
Chairman.

April 15, 1919.

REPORT OF THE COMMITTEE ON PUBLIC HEALTH AND MEDICAL EDUCATION.

To the House of Delegates:

This committee would respectfully report that it has studied the bill now pending before the Legislature for establishing Compulsory Health Insurance in the State of New York and that it is opposed to the bill.

The Davenport-Donohue Bill (Senate Bill No. 1492. Int. 73), as now amended and before the Assembly, essays to offer the necessary protection and representation for physicians, who accept cases for treatment under the Compulsory Health Insurance Act. But close analysis of the amended portions of the bill do not, we feel, sustain this contention.

On page 6, the bill provides that "the County Medical Society *may* submit to the bureau a plan of medical service for their county, together with a schedule of fees, etc., etc.," but "the physician who is chief of the bureau *shall* . . . fix the conditions of medical service, including a schedule of fees for such county under the Health Insurance law. . . ." It is obvious that, in the last analysis, the fixing of medical service and of fees is absolutely in the hands of the chief of the bureau.

Appeal from his decision may be taken by the County Society "to an arbitration board to be composed of two physicians, chosen by the County Medical Society, one employer member, chosen by the employer members, and one employee member chosen by the employee members of the board or boards of directors of the local funds or funds affected and one other person appointed by the Governor." Unless the Governor appointed a physician, it is evident that the majority of the arbitration board would rest with the laity. In other words, a just appeal would be lost at the hands of the commission, if the lay members could not see the justice of the appeal.

We feel that the bill as a whole creates a machinery which, in its organization and administration, is under the danger of political influence; and it is difficult to see how, under its provisions, its purpose can be successfully realized. From the large attendance of physicians at the recent hearing in Albany before the Senate Committee, who were opposed to the bill, it is evident that it is in State-wide disfavor with the medical profession. If this be true, it were wiser that this bill went back into committee for further consideration by its members, whom we hope will again invite the suggestions of medical men.

If Compulsory Health Insurance is to become a law, unless the bill be drawn so as to be measurably acceptable to the medical profession of the State of New York, it will, we feel, be a menace to the medical schools of the State; our young men will go elsewhere to study and practice medicine.

The wisdom of Compulsory Health Insurance seems at least debatable, for, despite all that has been said in its favor by people, whom we believe to be perfectly sincere and honorable in their efforts to secure the passage of compulsory health insurance laws, others who have made a study of the subject from a statistical viewpoint and are equally sincere in their motives, are opposed to it on the ground that it has proven a failure.

The time is not ripe for such legislation, but when it does arrive, some plan should be evolved, which would make it possible for self-respecting physicians of the best type to undertake the work and receive adequate compensation for it.

We approve Assembly Bill No. 1276, 1693, Int. 1145. Introduced by Mr. Kenyon, "To amend the Public Health Law, in relation to the practice of medicine."

We believe it would go far toward certifying the practice of straight medicine in the State of New York and prove an invaluable aid to our physicians, in keeping them informed of the status of the medical profession in the State.

In concluding its report, your committee begs to say that it has the utmost respect for all those who are working over these big problems so sincerely and devotedly and would not be considered as endeavoring to oppose constructive measures.

Respectfully submitted,

Joshua M. Van Cott, *Chairman.*

April 15, 1919.

REPORT OF THE SPECIAL COMMITTEE TO CONSIDER ECONOMIC METHODS OF CARING FOR THE PUBLIC HEALTH.

To the House of Delegates:

Your special committee appointed to consider economic methods of caring for the public health have given much careful consideration to the subject upon which they were directed to report. They have arrived at the following conclusions:

The purpose of modern medicine is to limit as far as possible all avoidable disease and to restore as quickly as may be, the sick to health.

All preventive measures and all scientific treatment are based on early and accurate diagnosis.

Correct diagnosis in doubtful or obscure cases can be secured only by the colaboration of physicians, laboratory workers and others, the result of whose labors are synthesized.

Were such group examinations made at a sufficiently early period, an incalculable amount of sickness, suffering and death with immeasurable economic losses would be prevented.

It becomes an imperative duty devolving upon the medical profession to provide for all of the people that degree of medical efficiency which will prevent as far as possible avoidable disease and limit the period of illness of those who become sick, not only in order that it may maintain its standing as a scientific body, but because on the physicians rest this responsibility.

It is, of course, unnecessary to emphasize before the house of delegates the value of group diagnosis in many obscure conditions of diseases. This was recognized by the State, when it made through the departments of health, many laboratory facilities available. These are not yet adequate. If these tests were universally employed the present facilities would need to be more than doubled. But while the laboratory is an invaluable aid, it does not and it should not make the diagnosis. Not only are complete physical examinations imperative, but reflexes may be present which may arise from the eye, the ear, the nose, the throat, the teeth, the uterus or the rectum. The opinion of the radiographer, the surgeon, or of the dentist, each may be of vital import. In private practice, these special opinions can be secured only by paying the fee of each of the examiners, or by obtaining them as matters of courtesy to the physician in charge. The former for people in moderate circumstances is prohibitory. The latter is as embarrassing to the self-respecting patient who is obliged thereby to become an object of charity as to the physician who is exacting from a colleague unrequited labor. Moreover, if these requests came as frequently as they should in order that every examination be complete, the physicians, busy with their own personal work, would find themselves swamped by the flood of patients which would be thrust upon them. The medical profession, therefore, finds itself confronted by a dilemma. To accomplish its largest possibilities, it must actively concern itself with preventive medicine and it must provide such diagnostic facilities for all the people as will limit unnecessary disease and promote the most rapid recovery of those who become ill.

To accomplish either of these purposes early and complete physical examinations must be made. These require the services of groups of trained workers. The necessary facilities are not now provided. A most urgent problem therefore, is to determine how they may be secured. The State Legislature is endeavoring to meet this evident need by what is sophistically miscalled *health insurance.* It is, in fact, *sickness insurance.* It seeks to provide relief after the damage is done. Actual health insurance such as should be provided is designed to prevent the organic break which when it comes has often already put the organism beyond hope of repair and the patient beyond the possibility of recovery.

Your committee would suggest that the remedy would seem to lie in the establishment of numerous easily accessible diagnostic clinics readily available through the medium of the family physician and safeguarding not only the physical welfare of the patient but the economic protection as well of all affected by the arrangement including the patient, the family physician and the consultants. The proper place for such clinics would seem to be in the public hospitals which are already equipped for such work and whose staffs could be augmented as necessity requires. It is evident that this would demand a revision of the plan of work as now carried out in nearly every hospital in the country.

The modern hospital is for the sick. It has no provision made for the prevention of sickness which should be its first and chiefest purpose. Now its private rooms are for the convenience of those able to pay for them. In its wards, indeed group examinations are made when they are used for teaching purpose, but in general the same individual methods obtain as are found in private practice and the same difficulties are met in securing group opinions from competent examiners. Nor should this be done gratuitously. There must be an economic understanding which while it enables the physician to do satisfactory work at the same time secures for him adequate compensation for the services rendered.

The subject is one having many sides. It concerns not only the physicians and the people of New York State but those of the whole country.

It is recommended, therefore, that the delegates of the New York State Medical Society to the American Medical Association be directed to present this important matter to the house of delegates of the American Medical Association with a request that it be considered by that body in order that some method may be adopted by which group diagnosis shall be secured which will be equitable alike to the patient, to the physician and to the state.

Respectfully submitted,

F. PARK LEWIS, *Chairman.*
CHARLES G. STOCKTON.
HERSEY G. LOCKE.
PARKER SYMS.
DWIGHT H. MURRAY.

April 15, 1919.

REPORT OF THE SPECIAL COMMITTEE ON DRUG ADDICTION.

To the House of Delegates:

The Special Committee on Narcotic Drug Addiction, after careful consideration of the law enacted May 13, 1918, has reached the following conclusions and begs to report them to your organization.

The present act which took effect the first of February of this year is less complex, less burdensome to the physician, and as it stands today, less exacting in its requirements than the Federal Law. While it is true, a registration fee of $1.00 per annum is exacted and there are certain restrictions as to the dispensing, at any one time to one patient, more than a certain quantity of cocaine or opium, there is no longer required an accurate record of the name of the patient and the amount dispensed in the individual case, as is still demanded by the Federal Law. It is only necessary to note the aggregate amount of such drugs dispensed to patients from time to time. The annual inventory, needed to comply with the Federal Law, or a simple record of the gross purchases and distributions will answer the requirements. Furthermore, the law allows the physician to prescribe upon ordinary prescription blanks such "quantity of any such drugs in excess of such respective quantities as may reasonably be required in the treatment of a surgical case or a disease other than drug addiction, provided such fact be stated upon the prescription." Only when he *otherwise* dispenses, is it necessary for him to keep a record of "the name and address of each person to whom and the name and amount of each drug so dispensed."

This only applies to the Physician dispensing more than the amount allowed to his patient at any one time, and that allowance is not to exceed, 2grs. of cocaine, or 15grs. opium, or 3grs. codeine, or 2grs. of morphine, or ¼gr. heroin. This allows for dispensing eight ¼gr. tablets of morphia at any one visit.

The Federal Law is much more stringent, requiring as it does an annual inventory of drugs purchased and dispensed, as well as the maintenance of a record for a period of two years, of the drug used, its quantity, the name of the patient to whom dispensed and the date of the transaction.

Perhaps for the general Practitioner the most annoying requirement of the act is, that the order to the manufacturer or wholesale dealer be issued in triplicate on an official blank. The Federal Law already requires a duplicate order and it does seem a useless sort of tautology to require a Physician to write five times for a small package of ¼gr. tablets of morphia. However, this is an incident to be forgotten.

The Committee is furthermore of the opinion that drug addiction should be treated in a proper institution. It does not believe it feasible to treat these cases successfully in private practice or at a Practitioner's office.

The present law establishes a method for the commitment of such cases to the custody of an institution for detention and curative treatment, and also provides for the acceptance of voluntary patients by a properly qualified Hospital.

In conclusion we believe the present law is not more burdensome than is necessary for efficient control of the growing evil of drug addiction, and therefore recommend that no further action be taken by the House of Delegates, at least until the present law has had a fair trial.

EDWARD B. ANGELL,
Chairman.
WILLIAM M. GIBSON,
THOMAS H. FARREL,
CHARLES F. STOKES,
HOWARD C. TAYLOR.

April 15, 1919.

REPORT OF THE COUNSEL.

To Dr. Thomas H. Halstead, as President of the Medical Society of the State of New York, to the Council and to the House of Delegates of the Medical Society of the State of New York:

SIRS:

I have the honor to transmit to you herewith my report of what has been done by me as your counsel during the year 1918.

One of the cases, a sponge case, was lost in the Trial Court in 1915. This case was appealed to the Supreme Court, Appellate Division, Second Department, and there the judgment was affirmed. From there I appealed this case to the Court of Appeals of this State, and the judgment originally rendered by the jury was affirmed, together with the costs and interest. I speak of this now because the Court of Appeals decided this case during the year 1918.

Again I am glad to report that during the past year not a single case tried has been lost; not a case settled. Twenty-one cases have been finally disposed of during 1918.

Thirty-two new actions were brought in 1918. I do not count as an added number two complaints based upon the same state of facts, because a husband and wife may bring two actions on the same state of facts.

You will find in my 1917 report a reference to the sponge case, which I have referred to above, and it is extremely regrettable that our own State Court of last resort accords the profession no added information as to what rule shall govern, if any, other than that laid down in the case of *Pike* vs. *Honsinger,* which has furnished for more than twenty years the exact measure of a doctor's responsibility. Other State Courts have furnished the profession valuable suggestions in so-called sponge cases and laid down most important dicta. I know no more about the responsibility of a nurse or interne, or the equipment of a hospital, whether it be good or bad, or whether the hospital and not the operator is responsible for miscounts, dirty instruments, or bad equipment leading to an unfortunate result, than I did before this case was taken to the Court of Appeals.

You should be advised that I have been informed that some of the insurance companies have abandoned the defense of doctors, because of losses in the trial of their cases. There must be but one explanation, if true, and that is, when a jury learns that a doctor is indemnified it is very willing to bring a verdict which holds the insurance company responsible but incidentally ruins the doctor's reputation. A doctor's reputation seems to be a matter of small moment to the jurors when they know that an insurance company is really the defendant. They have no hesitancy in finding a verdict which is primarily against the doctor and places him in an unfortunate position in his life's future work.

During the past year in the early months more cases were tried than in any one year in a corresponding number of months. But in the Fall of 1918 many cases had to be indefinitely postponed because of the absence of the defendants or witnesses who were engaged in war work, though many of these cases will be eventually revived and tried.

The State Dental Society has not made progress in the defense of its members, and I am convinced that their effort has been hampered by the importunities of insurance companies' "runners" who have interfered with this Society's honest effort.

I should be unmindful of my duty as your counsel if I did not express my appreciation of the unselfish effort of members of the Society who have willingly come forward, without thought of remuneration, in court or in conference, to assist their honest and careful brother practitioner, no matter what the sacrifice of time and money.

The following is a list of cases begun during 1918:

1. This is an action wherein it is claimed by the plaintiff that the defendant was reckless, unskillful and inaccurate in his diagnosis, in that the defendant treated the plaintiff for paralysis of the leg when, as plaintiff claims, plaintiff was suffering from a broken thigh. As this case has not been tried I will not discuss it further. The fact remains that the allegations of the complaint are so hopelessly inaccurate that I can hardly believe the plaintiff will bring the case to trial.

2. The facts of this case have never been dignified by the preparation of a complaint by the plaintiff. It may be added, that apparently no thought of an action arose until the doctor attempted to collect his bill. Such a suit presents a convenient method to frighten the doctor.

3. The case was not begun until the doctor had sued for his bill, and the defense of malpractice is set up in an answer to the doctor's bill. The claim is based upon the allegations made by the plaintiff that the doctor did not give the patient proper care and attention at childbirth, that the placenta was not removed, and it was claimed that she was blood poisoned through the doctor's carelessness. This case has not been disposed of and may not be discussed here.

4. This action is based upon an agreement made between the plaintiff and the doctor that he should treat her, but makes no statement as to what the nature of the treatment was, nor in what regard the doctor was careless or negligent. This necessitated a demand for a bill of particulars, and it appears by the bill of particulars that the claim is based upon retained placenta.

5. The basis of this particular claim against the doctor is that the patient suffered an accident which caused splinters of steel to become lodged in his left eye, and at the time of the accident he was totally blind in his right eye. The gravamen of the complaint is that the defendant failed to remove from the left eye of the plaintiff particles of steel and in that respect he was negligent; and; in addition, that the plaintiff was compelled to go to other doctors for help.

6. The plaintiff in this particular action charges that the defendant ordered the plaintiff to go to a hospital for an operation for appendicitis; that she underwent an operation at the hospital and was informed that her appendix had been removed. It appears from the complaint that the plaintiff left the hospital and was directed by the defendant to return but did not do so, but went to another physician who *did* remove her appendix. There is an added charge of false representations concerning the operation in this case which, as a matter of fact, is so absurd that I do not believe the case will be tried.

7. This particular case involves two different doctors and I am reporting on it only once. The plaintiff claims that these defendants did not use proper care and skill in their efforts to reduce a dislocation of the plaintiff's elbow. It is fair to add that one of the defendant doctors in this case had an insurance policy which he threw away.

8. In this case a summons was served without any complaint, so that it is impossible to know what the plaintiff's claim is. A notice of appearance and demand was served on the plaintiff's attorney, and afterwards the time of the plaintiff to serve her complaint was extended for several weeks, but no complaint has yet been served. I will wait a reasonable length of time and then move to dismiss this case.

9. The plaintiff here claims that she had received certain injuries to her left forearm at the wrist, and that in the care of this condition the doctor was negligent in that he did not accord proper attention, nor furnish proper appliances in the treatment of her arm. That by reason of this negligence in the care of the injury the bones of her left arm were allowed to overlap and she has endured great pain and suffering therefrom. This case will be tried probably within the next few months.

10. The plaintiff in this action claims to have had his foot injured by a heavy piece of iron falling upon his great toe. The defendant was called, but the plaintiff avers that he was so negligent in dressing it that proud flesh grew and the wound had to be treated by others. Part of his claim is based upon a bill which he had to pay to the other doctor for healing the wound. Other attorneys represent both the plaintiff and the defendant, and I am counsel only.

11. The plaintiff in this action claims that she fell and fractured her nose and left arm and that the defendant was called in to take care of these injuries. The plaintiff claims that the defendant did not give proper attention to the nose fracture or the arm fracture.

12. In this particular case the doctor is charged with having injected into the eye of an infant too

strong a solution of nitrate of silver, which resulted in the destruction of the child's eye. I am counsel in the case and am expected to try it. Because the case has not been tried and because there are so many important details connected with it that are of serious moment I refrain from discussing it. It will be disposed of next year, no doubt, and in favor of the doctor.

13. The basis of the claim of the patient in this case is that the doctor in the improper use of electricity caused a second degree burn below plaintiff's left scapula. The claim is for $10,000.

14. Two different physicians are sued together in this case on the theory of a contract between the patient's father and the two doctors. It is claimed that the plaintiff died because of the negligence of these doctors, and because of the added charge that the doctor who was employed to perform the operation did not perform it. The operation was one for appendicitis.

15. In this case the plaintiff claims that she was in need of an operation which would require the removal of her appendix and other internal organs, and that the defendant was careless and negligent in that he caused a great and permanent disability and disorder to the plaintiff. There are two defenses in this action: one, a general denial of the allegations, and, the other, that the statute of limitations had run against the case. This action has been finally disposed of by discontinuance, and a general release from the plaintiff to the defendant.

16. The plaintiff in this case claims that she slipped and fell on the ice and injured her left hip and fractured the neck of the left femur, and that the doctor was negligent and did not furnish proper care, attention, implements, appliances or other methods, in the treatment of the fracture, and she alleges that the ends of the fractured bone were allowed to "grind against each other and overlap" and the leg shortened. This plaintiff demands $50,000 from the defendant.

17. There are two plaintiffs in this action, a husband and wife. The claim of the husband arises out of employment of the defendant to take care of his wife in childbirth. She contends in her complaint that although the defendant was employed to take care of her, and that a small amount was deposited with him to secure his services, that finally she was compelled to rely upon another doctor and that the child died at birth. As this case has been on the calendar and will be reached for trial it cannot be discussed at this time, but the real facts of the case, which are easily proved, will show that both plaintiffs are entirely in error.

18. This case has never been dignified by the service of either a summons or a complaint, simply a threatening letter. The doctor applied for defense in June of 1918; nothing has been done by the plaintiff. I believe that no lawsuit will ever be begun.

19. The basis of this action is peculiar, in that it is claimed that the plaintiff employed the defendant to remove an ingrown toe-nail that had become infected. As a matter of fact the plaintiff had two toe-nails that were ingrown, and the doctor doing what he thought was proper removed the ingrown toe-nail which was not infected and proceeded to treat the one that was infected. He was sued because he did not take out the infected toe-nail. This case has been tried and the jury brought in a verdict in favor of the defendant.

20. The plaintiff in this action sues two doctors. The subject matter of the claim is that the defendants carelessly left a needle in a wound following an operation for gallstones; that they knew, or should have known, that the needle was in the wound; that they improperly pressed upon her abdomen to find the needle; and finally, that neither of the doctors called a physician of greater skill to advise her. This case will be tried in April, and cannot be further discussed now.

21. The plaintiff in this action claims that the defendant was called upon to care for injuries which she sustained, for which care her husband promised to pay. The injuries appear to have been to the plaintiff's left hand, fingers and wrist. Plaintiff claims that by reason of the negligence of the defendant her left hand, fingers and wrist have become stiff and sore, and that she desires to recover the sum of $5,000 from the defendant.

22. In this case it is claimed that the plaintiff having been struck by an automobile sustained a compound fracture of the femur of both legs and that the defendant undertook to treat these compound fractures and care for the patient. The plaintiff, in his complaint, says that the attempted setting of the leg failed to properly place the bones in apposition, and that the plaintiff was caused through the negligence of the defendant to undergo unnecessary suffering because the bones had to be reset. The plaintiff refers especially to certain casts which were applied, which he claims were insufficient in thickness and in length. This plaintiff adds another item to the complaint in that he avers that the physician was incapable of properly setting and treating the injuries; and further alleges that by reason of the negligence of the defendant the plaintiff resorted to plates to hold the fractured ends of the bones in place. Really;—the care accorded by the doctor to this patient was most complete, so much so that the patient has now signed a release, and the attorneys consented to a discontinuance of the action.

23. This case was begun by an action brought by the doctor to collect his bill. After the doctor had brought an action to collect his bill, the plaintiff brought an action in a superior court and applied for an order staying the trial of the case in the inferior court until the determination of the action in which it was charged that the doctor had been negligent. The attorneys in the action in the Superior Court have assured me they want to try the case, but I question it. I believe it is an attempt simply on the part of the patient to avoid paying his bill. I believe that the evil day cannot be avoided by any such procedure, and that finally the patient will have to pay what he owes for the services rendered.

24. This case is one brought by a plaintiff claiming that certain parts of his anatomy were feloniously removed for the purpose of having them engrafted upon another patient, in return for which service the operating surgeon was paid large sums of money. As a matter of fact, the various operations which were performed by the surgeon in this case were performed with a great deal of care. As the case may be reached for trial within the next few months, the facts may not be further discussed here.

25. This case involves a Potts fracture with serious involvements. The result of the effort of the doctor was most satisfactory. No action has been begun in this case and I doubt if there ever will, as several months have elapsed since the threatening correspondence was had with the doctor.

26. This action was begun by the husband of the patient. He claims that when his wife was pregnant he employed the defendant to look after her at the time of and after the birth of her child, but that the defendant in endeavoring to care for the patient was unskillful, negligent and unprofessional, and that the patient suffered great mental and bodily pain and anguish and was permanently injured; and further that by reason of the defendant's negligence, the plaintiff was required to employ the medical aid of various physicians and specialists. He also asks on his own behalf damage in that he has been deprived of the service of his wife and the comfort and happiness of her society, and asks damages in $11,200.

27. Although this case has never been brought to absolute suit, the letters to the attending doctors indicate that the claim is with reference to a fracture of the arm and wrist which were very much deformed because of the severity of the injury. There was also

another injury to the elbow. In this case the open wounds at the wrist and elbow required frequent dressings. It appears that the patient left the care of this proposed defendant after an X-ray had been taken and went to some other doctor. The patient refused to divulge the name of the other doctor to whom he went. Nothing more has developed in this case with reference to a lawsuit, and perhaps the patient has realized that everything was done that should have been done, and there cannot possibly be any criticism against the doctor.

28. This case came to my attention the latter part of the year, and relates to the treatment of a female patient by two different doctors. No action has been brought and I am sure none ever will, but these two cases have been brought to my attention and I must report on them. In view of the fact that this young woman patient was suffering from a trouble that cannot well be discussed, I will at this time simply refer to these two cases in one, and I feel sure that no action will ever be brought by any one.

29. This action is based upon a claim of the patient's husband, administrator of the patient's estate, that the deceased was not properly protected while being cared for in the hospital of the defendant, and that by reason of the negligence of the defendant in not properly safeguarding the patient she was destroyed.

30. The acts which are criticised in this case occurred outside the State of New York, although the defendant lived in New York and is a member of the Society. It is claimed by the plaintiff that in the improper use of X-rays the patient was burned on the right side of his head, and that by reason of this injury he has become paralyzed on the left side of his face and neck and throat, and that his power of speech has been impaired. This action was first taken for defense to an insurance company, but was afterwards taken from the insurance company and turned over to me. I have been informed that the plaintiff in this action has since died and that the action has abated. The defense interposed by me was two-fold; one, a general denial of the allegations of the complaint; and the other, the defense of the statute of limitations.

There is no desire on my part to again refer to the relationship of the members of the Medical Society of the State of New York to the insurance companies. Every member of the Medical Society has heard me repeatedly and read my reports year after year, and know exactly just what my feeling is with reference to their taking insurance policies indemnifying them against loss for negligence.

These policies are a very serious menace. The doctors who hold policies must remember that the State Society may not defend them, and they must choose between the attorney for the insurance company and the whole-hearted defense of the State Medical Society, should they be sued.

I have always contended that the money phase of a malpractice case is of the slightest moment, but that the reputation of the doctor is of the greatest importance; I believe I am not mistaken about that. An insurance company has no interest in the professional reputation of a defendant doctor. "Get rid of the case as cheaply as possible" is their prime motive.

Since my last report the Whitney Bill has been passed. This adds another requirement to the federal enactment demanding that every member keep track of every fraction of a grain of morphine or other habit-forming drug received or dispensed, under penalty of being criminally charged with a misdemeanor. I believe not one doctor in a hundred is familiar with this law, and I am also convinced that 50 per cent of the profession violate the law every day. Every member should secure a copy of the law and keep it before him lest he be the subject of criminal prosecution. I believe that this Harrison law is unconstitutional.

The law requiring doctors to register every case of a contagious disease, or venereal disease, must be watched. Every member should have before him this law also lest he be charged with a crime in failing to register names. I believe this law is also unconstitutional.

During the year 1918 I have again had the enthusiastic and whole-hearted co-operation of every member of the Society when I have needed it. This year has been in many respects an extraordinary one. Death has removed several of my most valuable helpers whom in various localities I have absolutely relied on for assistance, but I feel sure that in their places others will arise who will with the same energy, unselfishness and devotion, come to my assistance.

All of which is respectfully submitted.

James Taylor Lewis, *Counsel.*

December 31, 1918.

REPORT OF THE COUNCILOR OF THE FIRST DISTRICT BRANCH.

To the House of Delegates:

The twelfth annual meeting of the First District Branch of the Medical Society of the State of New York, held at Tuxedo Park, N. Y., Thursday, October 17, 1918, was well attended considering the influenza epidemic which was then at its height.

A luncheon was served at the Tuxedo Club House, after which the following papers were read and discussed.

Eulogy on late President, Richard Giles, M.D., W. Stanton Gleason, M.D., Newburgh.

Address, Brig. Gen. Robert E. Noble, Medical Corps, U. S. A., Washington, D. C.

Etiology of Pneumonia, Rufus Ivory Cole, M.D., Rockefeller Institute, New York City.

Address, Floyd M. Crandall, M.D., Secretary of the Medical Society of the State of New York, New York City.

"The Importance of the Adoption of Electrocardiography and Orthodiagraphy as Routine Measures in the Management of Disorders of the Heart," Louis Faugeres Bishop, M.D., New York City.

"Radium Versus Surgery in the Treatment of Carcinoma of the Bladder and Prostate," Benjamin S. Barringer, M.D., New York City.

The following officers were elected for the ensuing two years:

President, Joseph B. Hulett, M.D., Middletown.

1st Vice-President, George A. Leitner, M.D., Piermont.

2nd Vice-President, Edward C. Rushmore, M.D., Tuxedo Park.

Secretary, Charles Ellery Denison, M.D., New York City.

Treasurer, John A. Card, M.D., Poughkeepsie.

Respectfully submitted,

Joseph B. Hulett,
President.

REPORT OF THE COUNCILOR OF THE SECOND DISTRICT BRANCH.

To the House of Delegates:

It is with much regret that I have to report that an enforced absence during the past year has prevented my performing the duties which belong to the President of the Second District Branch, and I wish to acknowledge my indebtedness to the Vice-President, Dr. Holden, and the Secretary *pro tem.*, Dr. Lasher, whose generosity in performing these duties has enabled me to retain the honor of the office while away.

The main activity of the Branch during the year consisted in the holding of the Annual Meeting in the Kings County Library, Brooklyn, on November 28, 1918. Papers were presented at this meeting by Dr. Joseph S. Lawrence, Chief of Venereal Disease Bureau, New York State Department of Health; Colonel Raymond P. Sullivan, Colonel Medical Corps, Chief of Division of Surgery, and Major Glentworth R. Butler, Major Medical Corps, and covered the subjects of "Venereal Disease," "Surgery in Cantonments and General Hospitals," and other subjects of special interest pertaining to war conditions.

Respectfully submitted,

Arthur H. Terry, *President.*

April 15, 1919.

REPORT OF THE COUNCILOR OF THE THIRD DISTRICT BRANCH.

To the House of Delegates:

Since assuming the duties of the office of President of the Third District Branch of the Medical Society of the State of New York, I have attended the meetings of six of the seven counties in the branch.

Many members are engaged in war work, but I find the societies holding their meetings regularly and manifesting a keen interest in scientific subjects and in general matters affecting the profession.

The requirements of narcotic legislation are considered very irksome but the great overshadowing question engaging the attention of the societies is the proposed Compulsory Health Insurance Law. The sentiment of the societies is unanimously against it and special meetings have been called to discuss it and to protest against it.

Respectfully submitted,

Luther Emerick,
April 15, 1919. *President.*

REPORT OF THE COUNCILOR OF THE FOURTH DISTRICT BRANCH.

To the House of Delegates:

All of the County Societies have held regular meetings.

Attendance has been good and papers of a higher scientific grade than previously.

The Fourth Branch contributed more than its quota to the War Service, one of the counties being among the foremost in the State.

The Annual Meeting of the Branch was entertained at McGregor, through courtesy of Metropolitan Life Insurance Company Sanitarium.

In spite of very inclement weather, meeting was well attended, and very interesting papers presented.

Dr. Crandall, State Secretary, was present and gave interesting and instructive talk on relations of State Society to District Branches.

On account of army service, President of Fourth Branch was not able to attend various county meetings as planned, but has kept in close touch with same through the secretaries.

I believe there is a deepening interest by the members in the value and importance of the county, district and state meetings.

Respectfully submitted,

Lew H. Finch,
April 15, 1919. *President.*

REPORT OF THE COUNCILOR OF THE FIFTH DISTRICT BRANCH.

To the House of Delegates:

The Meeting, held in the New Century Auditorium, was called to order by the President, G. Massillon Lewis, at 1:30 P. M.

The prevailing epidemic of influenza seriously interfered with the attendance, there being less than seventy-five members present.

An Address of Welcome was given by Hon. James D. Smith, Mayor of Utica.

Hon. Frederick M. Davenport of Clinton gave an oration on "Americanism and the War."

Under the auspices of the State Department of Health, a series of moving pictures entitled "Keeping Fit" were put on the screen.

This was followed by a paper by Dr. Joseph E. Clark, Sanitary Supervisor, State Department of Health, on "Prostitution in Relation to Venereal Diseases and Present Measures for Control."

Dr. John L. Heffron, Dean of Syracuse University, read a highly appreciated paper, entitled "Some Cardiac Arrythmias and their Treatment."

A paper "The Rationale of Neurasthenia and of Disturbances of Arterial Tension and Heart Beat" was presented by Dr. George E. Barnes of Herkimer.

Remarks were made by Secretary Floyd M. Crandall, who was present.

Luncheon was served by the Oneida County Medical Society at Hotel Utica.

Respectfully submitted,

G. Massillon Lewis,
President.

April 15, 1919.

REPORT OF THE COUNCILOR OF THE SIXTH DISTRICT BRANCH.

To the House of Delegates:

The past year has been a very strenuous one for the members of the Sixth District Branch, either in connection with war activities or incident thereto. Our annual meeting on October 3 at Corning had only about one-third the usual attendance, due to the fact that the influenza epidemic was then at its height, and also to the fact that most of our younger and more active men, men who nearly always can be counted upon as active attendants and participants in our meetings, were either already in active army service or were preparing to start for camp when they were called. What the meeting lacked in numbers it made up in interest and the excellence of the papers delivered. The next meeting will be held in Owego the first Tuesday in October.

During the past year there have been deaths among our number of men eminent in the profession and with their years crowned with achievement, but the death of Dr. Charles H. Gallagher at Orleans in France on August 26, 1918, brought to us the realization of the sacrifice that so many of our number were prepared to make. At the time of his death Dr. Gallagher was secretary of the Sixth District Branch. Of a charming and winning personality to know him was to love him, and we all mourn his untimely end.

Dr. Gallagher was not the only physician of the Sixth District Branch to loose his life in war work and two or three of the men have been wounded. The whole district went far over the top in its response to the demands of the Army Medical Department.

With the passing of war time conditions and the transition to peace, our members are much concerned over the threatened action of the legislature in putting forward Health Insurance legislation.

While we feel that the medical profession should not allow itself to get in the position of interfering with men of the laboring classes in their efforts to better their condition, yet we should see to it that this is not done at our expense. If these measures are soon to be brought to the front with a possibility of passage the organized medical profession should be ready with a scheme for adequate compensation and control our part of our work, otherwise we will find a large part of medical practice in the State handed over to contract practice or dealt with in a vicious cut-throat manner. This is a matter which actively affects every one of our members and we demand active work of the State Society to aid in turning off the dangers of contract practice. A man cannot do good work unless he gets sufficient compensation, and we cannot see anything but harm to the highest ideals of medical practice by handing a large part of its activities over to a committee controlled by men who have no sympathies with us but to get a maximum amount of work from us with a minimum amount of pay.

Respectfully submitted,

R. P. Higgins,
President.

April 15, 1919.

REPORT OF THE COUNCILOR OF THE EIGHTH DISTRICT BRANCH.

To the House of Delegates:

During the year expiring December 31st, 1918, I attended a number of regular meetings of the County Societies comprising the Eighth District Branch.

Owing to the war conditions and to the influenza epidemic the meetings have been fewer in number with very much poorer attendance; nevertheless, the officers have been giving splendid attention to the affairs of their respective societies.

The scientific programs were carefully arranged to aid the members and the discussions showed deep interest. Case presentations were often a feature.

The annual meeting of the Branch for 1918 was held in Buffalo and consisted of two sessions in one day. The attendance was very light for good and sufficient reasons. The program elicited deep interest and much discussion.

The additions to the membership have of necessity been very small.

Respectfully submitted,

Albert T. Lytle,
President.

April 15, 1919.

BEER WITH AN ALCOHOLIC CONTENT OF 2.75 PER CENT. IS NOT AN INTOXICATING BEVERAGE.

By GEORGE W. WHITESIDE, LL.B.,
NEW YORK CITY.

THE Congress of the United States by an Act of November 21, 1918, forbade the manufacture after May 1st, 1919, and the sale after June 30, 1919, until the conclusion of the war and determination of demobilization of "beer, wine or other intoxicating malt or vinous liquor. . . ." The Federal Court in New York City has already decided that the word "beer" as used in this statute means intoxicating beer and this construction is inevitable when the statute is carefully examined. For some time prior to this date, the brewers of America have been manufacturing a beer with an alcoholic content of 2.75 per cent. by weight in accordance with a proclamation of the President. If such beer is intoxicating, its manufacture after May 1, 1919, would be prohibited. If it is, in fact, non-intoxicating, then its manufacture and sale is not prohibited. Suits have been brought by different breweries in the Federal Court in New York City, in which the brewers contend that beer with an alcoholic content of 2.75 per cent. by weight is not an intoxicating beverage, and in these suits they seek to establish the fact that they should be permitted without molestation to continue the manufacture of such beer. In these suits various experts have made affidavits containing interesting and valuable scientific data. For the purpose of determining whether or not this beer is an intoxicating liquor, the following definition was assumed by the experts:

"Intoxicating liquors are those liquors which are intended for use as, or capable of being used as, a beverage, and which contain alcohol in such proportion or per cent. that when consumed in any quantity that may practically be drunk by an ordinary man, or in any quantity that the human stomach can ordinarily hold, will produce a condition commonly known as intoxication or drunkenness. Drunkenness or intoxication is a materially abnormal mental or physical condition, manifesting itself in the loss of the ordinary control of the mental faculties or bodily functions to a substantial extent."

Dr. John Marshall, Professor of Chemistry and Toxicology in the Medical School of the University of Pennsylvania, co-author with G. E. Abbot of a work entitled "Courses for Systematic Qualitative Testing," and co-author with Edgar F. Smith of a work entitled "Chemical Analysis of the Urine," the translator of Medicus' "Qualitative Analysis" and a contributor to various chemical journals both in this country and abroad, in his affidavit, states among other things, as follows:

In considering the intoxicating effects of an alcoholic beverage that may be ingested by man, we must necessarily consider the effect of the alcohol which, by process of absorption, passes into the blood. It then becomes important to consider the proportion which said alcohol in the blood bears to the total amount of blood in the body. It is the alcohol in the blood which, by direct action on the brain, manifests itself in certain disturbances of mental faculties and bodily functions that at a certain point may be regarded as intoxication.

Accompanying the process of the absorption of the alcohol so ingested from a beverage containing alcohol, there is the constant process of oxidation, that is, destruction of the alcohol in the body, which causes a constant diminution of the total content of the alcohol in the blood. If the process of oxidation of the alcohol in the blood is more rapid than the process of absorption there never can be any question of intoxication, because there will never be at any one time sufficient alcohol in the blood to produce the effects known as intoxication. It is only when the process of oxidation does not keep pace with the process of absorption of the alcohol in the blood, and the process of absorption continues by progressive degrees to exceed the diminution caused by the oxidation of the alcohol in the blood, that intoxication can by any possibility result.

I have considered the published results of experiments that have been conducted by others on the intoxicating effects of alcohol. I likewise have observed to some extent the effects of the drinking of beer. These data have emphasized the fact that low percentages of alcohol in beverages materially reduce and in some instances make the same negligible as intoxicating agents, as alcoholic intoxication is generally understood and construed. In considering whether or not beer containing not to exceed 2.75 per cent. by weight of alcohol produces the condition that is ordinarily recognized as intoxication or drunkenness, consideration must be given to the volume and dilution of such beverage ingested and the action of the same upon the progress of absorption in the stomach and bowels, resulting in the introduction of a given amount of alcohol into the blood. It has been shown that the presence of one hundred and thirty-four one-thousandths of one per cent. (0.134%) to one hundred and fifty-three one-thousandths of one per cent. (0.153%) of alcohol in the blood produces the condition generally recognized as intoxication or drunkenness. Based upon the above experiments, the quantity of beer containing 2.75 per cent. by weight of alcohol, that would be required to be ingested to furnish one hundred and fifty-three one-thousandths of one per cent. (0.153%) of alcohol in the blood at the time when the maximum quantity of alcohol is present in the blood of a man weighing sixty-nine

(69) kilograms, would therefore be 3.185 cubic centimeters of three (3) quarts and eleven and seven-tenths (11.7) ounces of beer, a quantity manifestly beyond the capacity of the human stomach, and a quantity in excess of the amount that is practically drunk by an ordinary man in thirty (30) minutes.

One of the experiments resulting in the deductions above referred to was made with wine containing 10.35 per cent. by volume of alcohol and obviously the effects observed in that case were more rapid than would be the case in the more diluted beer containing 2.75 per cent. by weight of alcohol.

During the month of April, 1919, I conducted a series of experiments upon three male human subjects to determine what, if any, intoxicating effect might follow the ingestion by such subjects of quantities of beer with an alcoholic content of two and three-quarters per cent. (2.75%) by weight. I will refer to these experiments as Case I, Case II and Case III. The facts concerning these experiments are as follows:

Case I.

The subject was a male medical student twenty-two years of age, with a previous history of diphtheria at seven years of age, and scarlet fever at nine years of age. His condition of health at the time of the experiment was excellent. There were no drunkards in his family. From the age of three years to six years he was given, during the winter months, upon going to bed, one-half glass of beer about five times a week, but during the summer months, which he spent upon a farm, he received no alcohol. From the age of nine years to sixteen years he drank no alcoholic beverages whatever; from the age of sixteen years to eighteen years he drank about two glasses of beer a week, and from the age of eighteen years to twenty-two years he drank about five glasses of beer a week. During this latter period from eighteen years to twenty-two years, on Thanksgiving Day and Christmas he drank a very moderate quantity of wine or whiskey. He never took an active part in athletics, but during his senior year in High School (1913-1914) he played football and baseball, but not regularly. His weight at the time of the experiment, taken when nude, was sixty-five (65) kilos or one hundred and forty-four and three-tenths (144.3) pounds. The Wassermann blood reaction taken at that time was negative.

At 7.50 o'clock in the morning of the day of the experiment he ate breakfast, consisting of one dish of a cereal (puffed wheat) with cream, one small omelet and one wheat roll. He drank a glass of water on arising, and a glass of water and a cup of coffee at breakfast. At 9 o'clock of that morning he drank, in a period of five minutes, twelve hundred (1200) cubic centimeters (1 quart 8½ ounces) of beer, containing two and three-quarters per cent. (2.75%) by weight, or three and forty-nine one-hundreths per cent. (3.49%) by volume, of absolute alcohol. He drank, therefore, a total amount of forty-one and eighty-eight one-hundredths (41.88) cubic centimeters (1.4 fluid ounces) of absolute alcohol, an amount corresponding to six hundred and forty-four one-thousandths (0.644) of a cubic centimeter per kilogram of body weight. The temperature of the beer when ingested was seven degrees Centigrade (7° C.), or forty-four and six-tenths degrees Fahrenheit (44.6° F.). He reposed on a couch during the period of the experiment. The temperature of the room was fifteen degrees Centigrade (15° C.) or fifty-nine degrees Fahrenheit (59° F.). At 11.45 o'clock in the morning he ate one cheese sandwich and one ham sandwich. Blood was taken from the veins of the arms of the subject at 9.30, 10.30 and 11.30 o'clock in the morning, and at 12.30, 2.30 and 4.30 o'clock in the afternoon, and the quantity of alcohol in the blood so taken was determined quantitatively by the method of Nicloux. The maximum concentration of absolute alcohol found in his blood by these tests was thirty-five one-thousandths of one per cent. (0.035%) by volume, one and a half (1½) and two and a half (2½) hours after ingestion of the beer. The total blood in his body, being considered as four thousand seven hundred and seventeen (4717) cubic centimeters, the total amount of absolute alcohol present in his entire blood at the maximum period was one and sixty-five hundredths (1.65) cubic centimeters, which is three and ninety-four hundredths per cent. (3.94%) by volume of the total amount of absolute alcohol ingested.

A feeling of fullness of the stomach, due to distention, was experienced after drinking the twelve hundred (1200) cubic centimeters of beer. This feeling of fullness disappeared fifteen (15) minutes after the completion of the drinking of the twelve hundred (1200) cubic centimeters of beer. The subject experienced no nausea or dizziness, and his mental faculties were perfectly clear throughout the experiment. He showed no unsteadiness of gait when he walked about thirty (30) feet to urinate.

Case II.

The subject was a male medical student, twenty-three years of age, with previous history of diphtheria at sixteen years of age. His condition of health at the time of the experiment was excellent. There were no drunkards in his family. He drank no alcoholic liquors until he reached the age of twenty-one years, since which time he drank beer about seven times a year, and each time at a party. On these occasions he drank about eight glasses of beer, each containing about eight (8) fluid ounces. During the six weeks preceding the experiment he drank no beer, and at no time has he drunk whiskey, or the other so-called spirituous liquors. Beginning at his fourteenth year of age he played basketball during a period of four years, and during that period took active exercise in the gymnasium. For the last eleven years he has been an expert swimmer. At college he played football during the period of four years, that is, from his eighteenth to his twenty-second year of age, and during two summer seasons he was an instructor in swimming at a gymnasium in Philadelphia. At the time of the experiment his weight was sixty-eight and three-tenths (68.3) kilos, or one hundred and fifty and fifty-eight hundredths (150.58) pounds. The Wassermann reaction in his blood was negative.

At 8.30 o'clock in the morning of the day of the experiment he ate breakfast consisting of one plate of cereal (shredded wheat) with cream, one soft boiled egg, two slices of toast, one banana, and one cup of coffee.

At 10 o'clock in the morning he drank, in a period of fifteen (15) minutes twelve hundred (1200) cubic centimeters (1 quart 8½ fluid ounces) of beer, containing two and three-quarters per cent. (2.75%) by weight, or three and forty-nine hundredths per cent. (3.49%) by volume of absolute alcohol. He drank, therefore, a total amount of forty-one and eighty-eight hundredths (41.88) cubic centimeters (1.4 fluid ounces) of absolute alcohol, an amount corresponding to six hundred and thirteen one-thousandths (0.613) cubic centimeters per kilogram of body weight. The temperature of the beer when ingested was ten degrees Centigrade (10° C.) or fifty degrees Fahrenheit (50° F.). He reposed on a couch during the period of the experiment, in a room the temperature of which was seventeen degrees Centigrade (17° C.) or sixty-two and six-tenths degrees Fahrenheit (62.6° F.). At one o'clock in the afternoon he ate three mutton sandwiches and one piece of chocolate cake. The blood was taken from the veins of his arms at 10.30 and 11.30 o'clock in the morning and at 12.30, 1.30, 3.30 and 5.30 o'clock in the afternoon. The alcohol therein was determined quantitatively by the method of Nicloux. The maximum concentration of absolute alcohol in his blood was three hundred and twenty-five ten-thousandths of one per cent. (0.0325%) by volume, which was found in blood taken two and a half (2½) hours after the ingestion of the beer. The total blood in his body being considered as four thousand nine hundred and fifty-six and five-tenths (4956.5) cubic centimeters, the total amount of absolute alcohol circulating through his entire blood at the maximum period was one and six hundred and eleven one-thousandths (1.611) cubic centimeters, an amount which corresponds to three and eighty-five one-hundredths per cent. (3.85%) by volume of the total amount of absolute alcohol ingested.

The subject had a feeling of fullness of the stomach, due to distention, after drinking the twelve hundred (1200) cubic centimeters of beer. The stomach was tense and hard. Five minutes after the completion of the drinking of the beer the feeling of fullness disappeared. The subject experienced no nausea and no dizziness, and his mental faculties were perfectly clear throughout the experiment. He showed no unsteadiness of gait when he walked thirty feet to urinate.

SUMMARY OF CASES I AND II.

Beer containing 2.75 per cent. of alcohol by weight, drunk at one time by each individual was 1200 c.c. (1 qt. 8½ oz.), which contained a total quantity of 41.88 c.c. (about 1½ oz.) of absolute alcohol.

Time of drinking of beer		Time when blood was taken from individual		Percentage of alcohol in blood at time of blood taking	
Case I	Case II	Case I	Case II	Case I	Case II
9.00 a.m.					
		9.30 a.m.		0.015	
	10.00 a.m.				
		10.30 a.m.	10.30 a.m.	0.035	0.0075
		11.30 a.m.	11.30 a.m.	0.035	0.0175
		12.30 p.m.	12.30 p.m.	0.0325	0.0325
			1.30 p.m.		0.015
		2.30 p.m.		0.0125	
			3.30 p.m.		0.015
		4.30 p.m.		0.005	
			5.30 p.m.		0.005

NOTE: In the case of drunkenness reported by Schweisheimer, the concentration of one hundred and thirty-three one-thousandths per cent. (0.133%) of absolute alcohol by volume was found in the blood one and one-quarter (1¼) hours after ingestion of the wine, and the concentration of one hundred and fifty-three one-thousandths per cent. (0.153%) of absolute alcohol by volume was found in the blood one and a half (1½) hours after the ingestion of the wine.

CASE III.

The subject was a male medical student, twenty-three years of age, with a previous history of German measles at three years of age. His condition of health at the time of the experiment was excellent. There were no drunkards in his family. He drank no alcoholic beverages until he reached the age of seventeen years, since which time he has drunk from eight to ten glasses of beer in a month, and he averages one drink of whiskey in a month. He did not drink beer or any other alcoholic beverage for a week before the beginning of this experiment. During his fifteenth and sixteenth years of age he played football at High School, and during his seventeenth and eighteenth years of age he played football and golf while at a preparatory school. At college, from his nineteenth year to the present time, he has engaged in wrestling and has played lacrosse. His weight at the time of the experiment, nude, was sixty-five and eight-tenths (65.8) kilos or one hundred and forty-five and six-tenths (145.06) pounds. The Wassermann reaction in his blood was negative.

At eight o'clock in the morning of the day of the experiment he ate breakfast, consisting of two crullers, one cup of coffee and one-half glass of water. At nine o'clock in the morning he drank, within ten minutes, two glasses, each glass containing two hundred and ninety-five and seven-tenths (295.7) cubic centimeters or ten (10) fluid ounces of beer, containing two and three-quarters per cent. (2.75%) by weight, or three and forty-nine hundredths per cent. (3.49%) by volume, of absolute alcohol, and thereafter at intervals of thirty-five (35) minutes he drank one glass of beer, ten (10) fluid ounces, until the final drinking at 11.30 o'clock in the morning, aggregating six (6) glasses of beer, or a total volume of one thousand seven hundred and seventy-four and four-tenths (1774.4) cubic centimeters (1 quart, 28 ounces). The temperature of the beer when ingested was seven degrees Centigrade (7° C.), or forty-four and six-tenths degrees Fahrenheit (44.6° F.). As he drank a total volume of one thousand seven hundred and seventy-four and four-tenths (1774.4) cubic centimeters of beer, he consumed a total quantity of sixty-one and nine hundred and twenty-seven one-thousandths (61.927) cubic centimeters (about two ounces) of absolute alcohol, an amount corresponding to ninety-four one-hundredths (0.94) of a cubic centimeter of absolute alcohol per kilogram of body weight. This amount was consumed within a space of two and one-half (2½) hours. Each glass of beer contained ten and thirty-five one-hundredths (10.35) cubic centimeters, or thirty-five one-hundredths (0.35) of a fluid ounce of absolute alcohol.

During the experiment he walked from the chemical laboratory to the hospital and back, a distance of about three hundred and fifty feet (350) feet, and walked around the laboratory when he was not sitting on a chair. The temperature of the room was eighteen degrees Centigrade (18° C.) or sixty-four and four-tenths degrees Fahrenheit (64.4°F.). The blood was taken from the veins of the arm at 9.25, 10.10 and 11.10 o'clock in the morning and at 12.10 and 1.10 o'clock in the afternoon, and the alcohol therein was determined quantitatively by the method of Nicloux.

The maximum concentration of alcohol found in his blood was fifteen one- thousandths of one per cent. (0.015%) by volume. This was found in blood taken twenty-five (25) minutes after he drank his third glass of two hundred and ninety-five and seven-tenths (295.7) cubic centimeters (10 ounces) of beer, or one hour and ten minutes after he drank his first glass of beer; that is, after he had ingested a total quantity of eight hundred and eighty-seven and two-tenths (887.2) cubic centimeters (30 fluid ounces) of beer, containing a total amount of thirty and ninety-six hundredths cubic centimeters (about 1 ounce) of absolute alcohol, corresponding to forty-seven one-hundredths (0.47) of a cubic centimeter per kilogram of body weight. The total amount of blood in his body being considered as four thousand seven hundred and seventy-five and four one-thousandths (4775.04) cubic centimeters, the total amount of alcohol circulating through his entire body at the maximum period was seven thousand one hundred and sixty-three ten-thousandths (0.7163) of a cubic centimeter, an amount corresponding to two and thirty-two one-hundredths per cent. (2.32%) by volume of the total quantity of alcohol ingested prior to the blood taking. The maximum concentration of absolute alcohol found in his blood, taken after he had ingested the entire quantity (1774.4 cubic centimeters or 60 fluid ounces) of beer, was ten one-thousandths per cent. (0.010%) by volume. This concentration was found in the blood forty (40) minutes after he had taken his sixth glass, or three hours and ten minutes after he had taken his first glass of beer. At this time the total quantity of alcohol circulating through his entire blood was four thousand seven hundred and seventy-five ten-thousandths (0.4775) of a cubic centimeter, an amount corresponding to seven hundred and seventy-two one-thousandths per cent. (0.772%) by volume of the total amount of absolute alcohol ingested during the preceding three hours and ten minutes. The subject experienced no nausea and no dizziness, and his mental faculties were perfectly clear throughout the experiment. He showed no unsteadiness of gait in walking about.

SUMMARY OF CASE III.

The individual drank six portions of 10 oz. (295.7 c.c.) each of beer, containing 2.75 per cent., by weight, of alcohol, consuming a total quantity of 60 oz. (1774.4 c.c.). In each 10 oz. portion he drank 10.32 c.c. of absolute alcohol, making the total amount of alcohol consumed 61.9 c.c. (2 oz.).

Time of drinking a 10 oz. portion of beer	Time when blood was taken from individual	Percentage of alcohol in blood at time of blood taking
9.00 a.m.		
9.10 a.m.		
	9.25 a.m.	0.005
9.45 a.m.		
	10.10 a.m	0.015
10.20 a.m.		
10.55 a.m.		
	11.10 a.m.	0.010
11.30 a.m.		
	12.10 p. m.	0.010
	1.10 p.m.	0.0075

In view of the foregoing, I consider that beer with an alcoholic content of two and three-quarters per cent. (2.75%) by weight is not an intoxicating beverage.

Dr. William John Geis, conducted similar experiments upon several subjects, which confirmed the results arrived at by Dr. Marshall.

Dr. Charles A. Rosewater conducted a series of practical tests upon a number of subjects, which he reports, as follows:

I have conducted practical tests to determine whether or not an ordinary man can drink enough beer containing 2.75 per cent. by weight of alcohol to render him intoxicated. The subjects were tested in two groups. The first group consisted of thirteen men and comprised mechanics and brain workers between the ages of 23 and 66 years, representing various types of drinkers. They were furnished with highly seasoned food to stimulate thirst, and were encouraged to drink as much as they could. In conducting the test upon this group, I was assisted by Henry Hilfers and James B. Reilly, both of Newark, New Jersey, and before the conclusion of the test, each subject was examined by Dr. Augustus J. Mitchell, Assistant Police Surgeon of Newark, New Jersey.

The second group of subjects comprised men engaged in mental work, between the ages of 33 and 45 years. They were all extremely moderate users of alcohol, and took beer only rarely. They were furnished a regular dinner without soup and were asked to drink as much beer as they could during about four hours. This group was observed by the following named gentlemen: Drs. Smith Ely Jelliffe, James J. Walsh, George W. King, Samuel Stern.

The tests upon Group No. 1 were held at the De Jeanne Restaurant, 17 Central Avenue, Newark, N. J., on April 21, 1919, and covered a period of about four hours. The food consisted of herring, boiled ham with gravy, potato salad with mayonnaise and egg, bread and butter, tomatoes, cheese and crackers. In addition to this some of the men ate raw clams.

The beer used in testing Group No. 1 was obtained from Christian Fiegenspan, a corporation of Newark, N. J. It was received in sealed cases and in sealed bottles. Each bottle contained about 12½ ounces of beer. Each case and each bottle was opened in my presence by Louis Boehme of 11 West End Avenue, Newark, N. J.

On April 21, 1919, I ordered four bottles of the beer which was to be used in this test to be sent to Herbert B. Baldwin, a chemist of 927 Broad Street, Newark, N. J., for the purpose of a check upon the alcoholic content. About one hour before the test was started, Mr. Baldwin reported to me that his analysis showed the beer to contain 2.46 per cent. by weight of alcohol.

In order to raise the percentage of alcohol in the beer beyond 2.75 per cent. by weight of alcohol, I added 20 minims of a 94 per cent. solution of alcohol to each bottle of beer, as soon as it was opened.

On April 22, 1919, I took four bottles of beer from the lot used in the test, and also the bottle of alcohol from which I obtained the alcohol used, to the above mentioned chemist. Herbert B. Baldwin, for a check analysis.

On April 25, 1919, I received from Mr. Baldwin a certificate showing that the beer tested by him on April 21st and 22nd contained 2.46 per cent. of alcohol by weight, and that the alcohol I submitted contained 93.8 per cent. of alcohol by volume.

The tests upon Group No. 2 were held at the Hotel Brevoort, 8th Street and 5th Avenue, New York City, on the evening of April 24, 1919.

The dinner served to the tested subjects consisted of raw oysters, chicken, potatoes, olives, salad, cheese, crackers and coffee. The beer was received in sealed bottles, each containing about 12 ounces, a sample bottle of which had been analyzed by the Lederle Laboratories of New York City, who furnished a certificate that the alcoholic content was 2.34 per cent. by weight, and who wrote that it would be necessary to add 27 minims of a 95 per cent. solution to each bottle containing 11.2 ounces of beer in order to bring the alcoholic content to 2.75 per cent. The Lederle Laboratories also furnished, under seal, a bottle of 95 per cent. ethyl alcohol. I personally broke the seal and opened each bottle of beer served and added to each bottle 30 minims of the 95 per cent. solution of ethyl alcohol.

The following table covers Group 1, showing the number of bottles of beer consumed by each subject:—

Subject	Age	Weight	Occupation	No. of Bottles Consumed
No. 1	55	212	Typewriter Supplies	6
No. 2	45	150	Vice-Pres.	6
No. 3	38	198	Bank clerk	6
No. 4	28	168	Bank clerk	9
No. 5	26	190	Electrician	13
No. 6	24	145	Broker's clerk	8
No. 7	40	165	Salesman	9
No. 8	66	225	Bookbinder	13
No. 9	57	200	Steel engraver	15
No. 10	31	170	Printer	13
No. 11	46	150	Cigar maker	9
No. 12	23	140	Mechanic	7
No. 13	52	170	Salesman	7

GROUP 1.

The personal characteristics and the result of the tests for each individual noted at the time, are as follows.

No. 1. Has been accustomed to taking alcoholic drinks since childhood. Has very rarely been intoxicated but remembers three or four instances when he was intoxicated by drinking cocktails and mixed drinks. Has had no alcoholic drinks during the last ten days. Was only able to remain for about one hour, during which time he drank six bottles of beer. Before leaving, he addressed the company, outlining a project for establishing a social center for negroes in Newark, a movement with which he is identified. He was compelled to leave the dinner to attend a meeting in connection with this social movement.

No. 2. Has been accustomed to taking alcohol in various forms since he was twenty-one years of age. Has never been drunk. His daily quantity varies from a few glasses of beer to four or five bottles in one day upon social occasions. He has had no alcoholic beverage in two days. He drank six bottles in about three hours, and refused a further quantity, saying he was all filled up, and that there was no pleasure in drinking any more, and that any additional quantity would be distasteful.

No. 3. Had been drinking since childhood mostly beer, occasionally other forms of alcoholic beverages, taking about six glasses of beer daily, usually with his meals. Remembers that he once was drunk on "ten-guinea-ale." He drank six bottles in about three hours and pronounced himself completely satisfied, saying that he had drunk much more than he does normally, but was trying to see how much he could hold.

No. 4. Has been a constant beer drinker since he was a young man, taking about five glasses of beer daily, though often taking nothing for several days. Has been drunk upon two occasions on whiskey. One month ago he was honorably discharged from the United States Army, in which he served seven months. During this time he drank practically nothing in the nature of alcoholic beverages. Since his discharge from the Army has taken a few glasses of beer daily. but has had nothing in the two days before the test. He drank nine bottles of beer in the space of four days, and said he did not wish any more.

No. 5. Has been a daily drinker of all forms of alcoholic beverages for several years and has, on several occasions, been drunk on whiskey. States that he has never been able to get drunk on beer. He drank thirteen bottles of beer in about four hours and did not wish any more.

No. 6. This man's history is practically the same as that of No. 5. He drank eight bottles of beer in about three hours and left to attend a wedding.

No. 7. Has been drinking beer since early childhood, in hot weather, taking as much as ten glasses a day. Has been drunk on whiskey on several occasions. He drank nine bottles of beer in about three hours and stated he had no desire for more.

No. 8. Has been a beer drinker since childhood, and has used alcohol rather freely for many years. Takes alcohol in some form or other every day and has been drunk several times on whiskey. He drank thirteen bottles of beer in about four hours and stated that while he could drink more, it would make him uncomfortable.

No. 9. has been a constant daily beer drinker for many years. averaging a pint or more every day. On social occasions has taken mixed drinks and has been intoxicated thereby. He drank fifteen bottles of beer in about four hours.

No. 10. Has been a moderate beer drinker since the age of seventeen years and for a number of years has averaged eight glasses of beer a day. Has never been drunk. He drank thirteen bottles of beer within about four hours.

No. 11. Has been a drinker of all forms of alcoholic beverages since he was a young man and has very rarely been intoxicated, then only when he drank whiskey or mixed drinks. He averages four or five glasses of beer a day. He drank nine bottles of beer in about four hours.

No. 12. Has been drinking since the age of eighteen and takes alcoholic beverages in various forms. He takes something of this kind every day, as a rule, though there have been times when he would go a week or two, or even a month, without any alcohol whatever. Has been intoxicated on several occasions on whiskey. He drank seven bottles of beer.

No. 13. Has been a daily and constant drinker of alcohol, mostly beer, since he was a young man. He averages from one to three bottles of beer a day, and has never been drunk. He drank seven bottles of beer in about three hours and states that this was far in excess of what he had ever drunk before.

GROUP 2.

No.	Age	Weight	Occupation	No. of Bottles Consumed
14	42	192	Artist	8
15	34	154	Artist	8
16	45	176	Publicist	3
17	40	139	Journalist	6½
18	43	140	Architect	6½
19	33	145	Author	5

The personal characteristics and the result of the test for each individual in Group 2 were as follows:

No. 14. Since the age of twenty-one has been an extremely moderate drinker, averaging about one drink of whiskey per day. He drank eight bottles of beer in about four hours, making every effort to drink all he could, and found it impossible to take more than he did.

No. 15. Has been a moderate drinker for some years, taking mostly whiskey and cocktails, and occasionally beer, in hot weather. He averages three drinks of whiskey a day and has been intoxicated on several occasions. He drank eight bottles of beer in about four hours, forcing himself to do so, and complaining of distention caused thereby.

No. 16. Has been an extremely moderate drinker since the age of nineteen years, only rarely taking beer. He takes one or two cocktails daily and has never been drunk. He drank three bottles of beer during the evening and found it difficult to do so, stating that beer was distasteful to him.

No. 17. Has been an extremely moderate drinker since early youth, taking a cocktail at night before dinner and rarely more. He drank six bottles of beer during the evening.

No. 18. Since early childhood has taken very moderate quantities of light wine and beer with his meals, and now takes about two cocktails or highballs a day. Had a glass of beer with his lunch the day of the test. He drank six bottles and a half of beer and refused more due to distention.

No. 19. Drank beer between the ages of eighteen and twenty-one years when at college, and since then has been extremely moderate, taking about one drink a day, consisting of either whiskey or a cocktail. He drank five bottles of beer during the course of the evening and did not wish more.

Summary of Tests.

Summarizing the tests above described, the experiments lead to the following conclusions:

1—The drinking was forced. Every man drank more than he would have ordinarily drunk had he not been participating in a test.

2—The beverage tested (beer with an alcoholic content of 2.75 per cent. by weight) does not compel repetition.

3—Satiation is complete and rapid. The subjects stated that they felt bloated and that additional drinking would merely add to their discomfort and was undesirable.

4—Several of the subjects admitted having on previous occasions been drunk on whiskey or mixed drinks or heavy ale, showing thereby that they were not immune to drunkenness.

5—Those subjects accustomed to drinking large quantities of beer manifested the same sensation of "bloatedness" as did those who were unaccustomed to drinking large quantities.

6—Not one of the tested subjects manifested the slightest sign of drunkenness, nor conducted himself in any manner which would even faintly indicate intoxication.

7—The quantity of beer consumed by the subjects during the tests ranged from about 36 ounces to about 187 ounces.

Drs. Smith Ely Jelliffe, James J. Walsh and George W. King, who observed the tests upon Group 2, certified in their affidavits that none of the subjects were intoxicated.

Augustus John Mitchell, M. D., Assistant Police Surgeon of Newark, New Jersey, who was present at the Newark test, certified that none of the subjects was intoxicated.

It was the consensus of opinion among those who observed these tests and those by whom careful consideration of the tests was given, that beer with an alcoholic content of 2.75 per cent. by weight is non-intoxicating. This opinion was expressed in affidavits submitted in these cases by Hobart Amory Hare, M. D., Arthur Perry Hasking, M. D., Stephen Perham Jewett, M. D., Moses Keshner, M. D., and Frank A. McGuire, M. D., in addition to the physicians whose names are mentioned above. Other physicians likewise expressed similar opinions based upon their general experience. Prominent among these is Dr. A. A. Brill, of New York.

MEDICAL VETERANS OF THE WORLD WAR.

An organization known as "The Medical Veterans of the World War" is being formed with most commendable objects. Its scope is best shown by the preliminary articles of the By-Laws.

> Article 1.—Title. The name and title of this organization shall be The Medical Veterans of the World War.
>
> Article 2.—Object. The object of this Association shall be to perpetuate fellowship, to prepare history, secure co-operation for the mutual benefit of the medical men who served in the World War, 1914-1918, and for the mutual improvement and social intercourse of its members.
>
> Article 3.—Classification for Membership
>
> Section 1.—The members of this Association shall be divided into two classes: (1) members and (2) associate members.
>
> Section 2.—The following persons shall be eligible to membership in this Association:
>
> 1. All medical officers, contract surgeons of the United States Army and acting assistant surgeons of the United States Public Health Service who have served in the Medical Corps of the United States Army, United States Navy, and United States Public Health Service.
>
> 2. All medical members and medical examiners of Local, Medical Advisory, and District Boards, officially appointed by the President of the United States, the Provost Marshal General of the United States Army, and the Governors of the various states.
>
> Section 3.—The following persons shall be eligible to associate membership in this Association:
>
> Members of the Medical profession of Allied nations who have been in the service of their governments during the World War.
>
> Section 4.—Associate members shall enjoy all the privileges of membership except the right to vote at the annual meeting.

The temporary President is Dr. Hubert Work, Speaker of the House of Delegates of the American Medical Association.

According to a letter received from Dr. Alexander R. Craig, Secretary, the organization has the sanction of the American Medical Association.

A supply of application blanks has been furnished to the Secretary of the Medical Society of the State of New York. He will be glad to supply a copy to any one applying for it. It is to be filled out and forwarded with a fee of one dollar to Colonel Russell, United States Army. Full directions will be found upon the blanks.

Medical Society of the State of New York

RESOLUTIONS PASSED BY THE SECTIONS ON MEDICINE AND SURGERY.

At the Joint Meeting of the Sections on Medicine and Surgery, held in Syracuse May 8, 1919, the following resolution was passed:

That the Medical Society of the State of New York expresses its very great appreciation of the action of the Surgeon General of the United States in presenting to the Medical Profession of this State through this Society the subject of "Reconstruction Surgery" in such a comprehensive and instructive manner as has been done today by eminent and experienced members of the Medical Corps of the United States Army.

County Societies.

MEDICAL SOCIETY OF THE COUNTY OF ERIE.

Regular Meeting, Buffalo, N. Y.
Monday, April 21, 1919.

The meeting was called to order by the President, Dr. King, at 8.30 P. M. in the rooms of the Buffalo Orpheus Hall, one of the largest attendance in the history of the society being present.

The minutes of the previous regular meeting were adopted as published in the State Journal.

On presentation by Dr. Jacobs, Chairman Committee on Membership, seven new members were elected and three reinstated.

Dr. Woodruff made a verbal report on the activities of the Committee on Economics, and stated that he had appeared before most of the county societies in the Eighth District, as well as before the Dentists', Druggists' and Nurses' Associations, explaining to them the amalgamation scheme, and the organization of a new public health league.

Dr. Cooper, Chairman Committee on Legislation, reported: That in accordance with instructions received from the society every effort had been made to oppose the Health Insurance Bill by letters and personal interviews with the Erie County representatives, and also by requesting physicians to wire their representatives in opposition to the bill. A plan was also presented to the council and sent to nearly 1,000 physicians with a reply postal to develop the potential political power of the profession in Erie County in order to exert as strong an influence as possible on questions of public health.

The committee also recommended that the delegates to the State Society be instructed to vote for any measure looking towards the establishment of a permanent representative at Albany, who would promote the interests of the public in questions of health.

Dr. Russell, Chairman, made a brief report of the Milk Commission.

The reports of Drs. Woodruff, Cooper and Russell were received and filed.

Dr. F. Park Lewis, presented reports for the Committees on Public Health, Diagnostic Clinics, and on securing a permanent home for the Association.

The report of Dr. F. Park Lewis, Chairman of the Special Committee to consider economic methods of caring for the public health to be presented to the coming meeting of the State Society was received and recommendations contained therein adopted.

Moved by Dr. Thomas H. McKee, seconded by Dr. Woodruff, that Section 1 of Chapter 12 be amended as follows:

Each member shall pay annually the sum of five dollars ($5.00), which shall be due on the first day of January of the current year. At the same time he shall pay the amount of the per capita State assessment fixed by the House of Delegates for the current year.

Motion, according to the By-Laws, was laid on the table until the next meeting.

Dr. Halsted, President of the State Society, was the guest of the evening, and made a brief address in which he complimented the society on its progressive attitude and on the work it had performed.

Dr. Gaylord, who had been delegated to represent the society at the hearing on the public health bills, made a verbal report, and also stated that for four years the medical profession had gone to these hearings simply prepared to object to health insurance, and as far as he knew had never offered anything to take the place of such legislation, or to offer a constructive program. This was a serious handicap, especially as Senator Davenport, Chairman of the Senate Committee, had expressed a desire for constructive criticism from the medical profession, and also stated his willingness to concede any reasonable request which the practitioners of the State considered to be to their interests, and the interests of public health.

As a result of this request of Senator Davenport, a committee had been appointed by the President consisting of Drs. H. J. Gaylord, F. Park Lewis, Albert T. Lytle, Franklin C. Gram and President King, ex-officio. to draft a program which would embody the attitude of the medical profession of Erie County towards health insurance.

Dr. Gaylord presented a draft for the consideration of the society, and moved its adoption. Seconded by Dr. Cott.

After discussion by Drs. Cary, Rochester; Pryor, O'Gorman, Goodale, Kavinoky, Rice, Bonnar, van Peyma, Wall, Michael, Jacobson, Woodruff, and Gibson, it was moved by Dr. Wende, seconded by Dr. Kauffman, that the proposed program be laid on the table and a special meeting be called by the council to consider it.

Special Meeting, Friday, May 2, 1919.

The special meeting called in compliance with the resolution of the society held on April 21, was called to order by the President, Dr. King, at 8.30 P. M. in the Buffalo Medical College. Dr. King stated that he had appointed the following committee to meet with a similar committee of dentists, druggists and nurses for the purpose of forming an organization which would act as a protective league against the encroachments of the proposed health insurance. Drs. Nelson G. Russell, Francis M. O'Gorman, Thomas Walsh, Charles R. Borzilleri, John V. Woodruff, Walter S. Goodale, Harry N. Feltes, Maud H. Frye, Archibald D. Carpenter, Warren Britt, Charles J. Rosengren, Leonard Curtice, Julius Ullman, Francis J. Butlak and Chester C. Cott.

Dr. Wende moved that the resolutions laid on the table at the meeting of April 21st be taken from the table. Carried.

On motion of Dr. Russell, seconded by Dr. Meyer, a set of substitute resolutions were presented, which, after amendment by the Society, were on motion by Dr. Kauffman adopted by unanimous vote, as follows:

Resolved, That the Medical Society of the County of Erie is unalterably opposed to Compulsory Health Insurance as framed in the bills, which have thus far been introduced at Albany.

That the Medical Society of the County of Erie favors the constitution of group diagnostic clinics if adequate and continuous control of their organization and management by the medical profession can be fully assured. We recognize the necessity of such further action as will improve the care of the sick and further the prevention of disease. We are in favor of the appointment of a state wide committee of physicians for the study and consideration of health insurance designed to give the best care possible to the people of this state and to consider constructive measures which will promote these aims.

That the Medical Society of the County of Erie asserts that upon all bills of whatever nature affecting medical practice the Legislators must recognize the expert fitness to advise, and can only thus obtain the co-operation of the duly organized medical profession of the State, so that the health and welfare of the people may be safeguarded, and that no calamitous results may come to the community from ill-advised legislation.

That the Medical Society of the County of Erie favors the county and state federation of physicians, dentists, nurses, pharmacists and allied interests in order to foster mutual understanding and to enlighten and influence public opinion in all matters affecting the health of the people and to secure protection from dangerous and hasty legislation.

That unless the foregoing resolutions, in substance, are accepted and incorporated in their entirety in any law hereafter adopted by the legislature of the State of New York, the medical profession of the County of Erie do hereby unanimously agree that we will under no circumstances, serve in any professional capacity under such act.

That the foregoing resolutions be adopted by the Medical Society of the County of Erie and that its delegates be instructed to present them at the annual meeting of the House of Delegates of the Medical Society of the State of New York to be held in Syracuse, May 5th, 1919, and urge their adoption by the State Society.

Dr. Richter moved that the Secretary be directed to have these resolutions printed for the delegates, and for distribution to the members of the County Society and others. Adopted.

Dr. Woodruff moved that the President appoint a Committee to consider the proposed league of physicians, dentists, nurses and pharmacists, of which Dr. Pryor be Chairman. Before discussing this motion, it was decided to adjourn and reconvene as an informal meeting. Motion to adjourn. Adopted.

At the adjourned meeting Dr. Pryor moved that Dr. King act as Chairman. Motion carried and Dr. Gram was elected Secretary.

Dr. Woodruff moved that Dr. Pryor be appointed Chairman of the Committee to organize the medical profession of Erie County, and be given the privilege of appointing his own committee.

At the request of Dr. Pryor that the motion be changed so that the Chairman appoint the Committee, also that an expert organizer be employed to assume the business management, Dr. Woodruff introduced the following amended motion: That the Chairman appoint a Committee of fifteen to organize the medical profession of Erie County on a business basis, and that Dr. Pryor head this committee.

Dr. Gaylord suggested that the number of the Committee be reduced to five.

Dr. Gaylord's motion was agreed to by Dr. Woodruff and carried.

Dr. Pryor suggested that this league be a business organization and employ an organizer to go through the State and also asked if the profession would stand back of such a movement with the necessary funds.

Dr. Haley moved that every one sign this league and subscribe with the understanding that the dues be $5.00 for the present. Seconded by Dr. Chester Cott.

The Chair suggested that the question of dues be left to the newly proposed organization.

Dr. Haley's motion carried.

Dr. Wende moved that the Chairman of the Organization Committee be empowered to appoint a business manager or organizer to get the medical profession organized for the new league and extend the movement beyond Erie County and co-operate with the committee from the professions. The motion was not seconded and after some informal discussion was permitted to drop, for the reasons expressed to the effect that such action should properly come from the new proposed organization of doctors, dentists and nurses.

CAYUGA COUNTY MEDICAL SOCIETY.

Quarterly Meeting, Auburn, N. Y.
Thursday, May 15, 1919.

The meeting was called to order in the parlors of the Women's Union Building. The President, Dr. Harry E. Anthony, presiding.

The following interesting and instructive program was listened to by an unusually large attendance:

M. P. Conway, M.D., Auburn, gave his report as Delegate to the State Society recently held in Syracuse.

Thomas H. Halsted, M.D., Syracuse, retiring President of the State Society, spoke on Some Medical Readjustments Following the World War.

Lieutenant Francis E. O'Brien related most interesting experiences of his service overseas.

Following the meeting the Society adjourned for a buffet luncheon.

MEDICAL SOCIETY OF THE COUNTY OF SENECA.

Semi-Annual Meeting, Waterloo, N. Y.,
Thursday, May 15, 1919.

Following a luncheon the meeting was called to order by the President, Dr. Charles T. Ostrander, in the Hotel Brunswick.

The minutes of the annual meeting were read and approved as read.

The following officers were nominated for election at the annual meeting:

President, Thomas F. Cole, M.D., Romulus; Vice-President, William H. Montgomery, M.D, Willard; Secretary and Treasurer, William M. Follette, M.D., Seneca Falls; Censors, John F. Crosby, M.D., Seneca Falls, Carroll B. Bacon, M.D., Waterloo, William H. Montgomery, M.D., Willard; Delegate to the State Society, Robert M. Elliott, M.D., Willard; Alternate, C. Anna J. Brown, M.D., Seneca Falls.

The report of the Treasurer was read and approved.

The President read a letter from the Saratoga Medical Society urging that the Society take some action opposing the Compulsory Health Insurance bills. After considerable discussion it was moved, seconded and carried, that the Medical Society of the County of Seneca go on record as being opposed to the Health Insurance Bill of Mr. Davenport, Sr., No. 73,819 Int. 73, and endorses the opposition made by Dr. Ostrander at a hearing in Albany.

The committee having in charge the revision of the fee bill made their report and recommended that certain fees be advanced. The revision was adopted.

The chair then named Drs. George W. Clark, Adolphe Letellier, and Lewis A. Gould to act as a Committee on Legislation.

Homer J. Knickerbocker, M.D., Geneva, gave an interesting talk on "Medical Economics," after which the meeting adjourned to meet at Willard, N. Y., in the fall.

RICHMOND COUNTY MEDICAL SOCIETY.

Regular Meeting, Staten Island,
Wednesday, May 14, 1919.

The meeting was called to order in the library of the Staten Island Academy at 8.30 P. M.

The minutes of the regular meeting of April 9, 1919, and of the special meeting of April 15, 1919, were read and approved.

The following resolutions were adopted on the death of Jefferson Scales, M.D.:

Whereas, By the will of God, Dr. Jefferson Scales has finished his work in this world and has been taken from us; be it

Resolved, That in Dr. Scales's death the Richmond County Medical Society loses one of its most valuable and faithful members. It was through his efforts and during his term of presidency that this society was given new life and became a real live organization. Dr. Scales has been an active and honored member of this society for many years, has earned for himself an enviable reputation as a skillful physician and has endeared himself to a large circle of friends by reason of great personal charm; be it

Resolved, That we tender to Mrs. Scales our deepest sympathy in this her great bereavement; and, be it further

Resolved, That these resolutions be entered upon the minutes of the society and a suitable copy sent to Mrs. Scales.

A paper was read by Dr. John S. Ware, Stapleton, entitled "Notes on the After Care of Infantile Paralysis on Staten Island." A general discussion followed.

Drs. Frederick Coonley, Charles Pearson, George Walrath and Arthur Driscoll reported a number of interesting cases.

On motion the meeting adjourned to the Staten Island Club, where a collation was served.

MEDICAL SOCIETY OF THE COUNTY OF MONROE.

Regular Meeting, Rochester, N. Y.,
Tuesday, May 20, 1919.

The meeting was called to order by the President, Dr. Nugent, at 9.15 P. M.

The minutes of the previous meeting and the minutes of the Comitia Minora were read and approved.

The following candidates were declared elected to membership: Dr. R. J. Campbell, Dr. Frank E. Cross.

Moved by Dr. W. Mortimer Brown, seconded by Dr. C. W. Hennington and carried, that delegates of the Medical Society of the County of Monroe to the annual meeting of the State Society to be held in New York City, 1920, be instructed to invite the State Society to meet in Rochester in 1921, and that they also be instructed to present the name of Dr. Ralph R. Fitch for President of the State Society.

Dr. Hennington drew the attention of the society to the celebration of the one hundredth anniversary of the founding of the Medical Society of the County of Monroe, which will take place next year.

The speakers of the evening were Dr. Ralph R. Fitch, who spoke on the treatment of compound fractures and demonstrated various types of dressings, and Dr. Edward L. Hanes, who spoke on types of neuropsychiatric cases encountered in military base hospitals.

MEDICAL SOCIETY OF THE COUNTY OF FRANKLIN.

Semi-Annual Meeting, Saranac Lake, N. Y.,
Tuesday, May 13, 1919.

Owing to the illness of the President the meeting was called to order by the Vice-President in the Free Library Building at 12:30.

Members present: Drs. Abbott, Blanchet, Bray, Blankemeyer, Lawrason Brown, Robert M. Brown, Cone, Dalphin, Finney, Harrigan, Heise, Kissane, Paterson, Trembley, Trudeau and White.

Visitors present: Drs. Ralph E. Powell, Montreal; G. R. Satterlee, New York City; and H. L. Sampson, Trudeau.

The minutes of the last meeting and the report of the Comitia Minora were read and approved.

Harold D. Tobin, Chateaugay, and Edgar Mayer, Saranac Lake, were elected to membership.

The following officers were nominated for election at the annual meeting:

President: Sidney F. Blanchet, M.D., Saranac Lake; Vice President, John E. White, M.D., Malone; Secretary and Treasurer, George M. Abbott, M.D., Saranac Lake; Censor for three years, William M. Macartney, M.D., Fort Covington; Delegate to the State Society, Harry A. Bray, M.D., Ray Brook.

At 1 o'clock the meeting adjourned to the Berkeley Hotel for dinner.

Scientific Session, 2:30

Artificial Pneumothorax Treatment in Pulmonary Tuberculosis, Advantages in its Earlier Application, Sidney F. Blanchet, M.D., Saranac Lake.

A discussion followed by Drs. Lawrason Brown, Robert M. Brown and Robert C. Paterson.

Obscure Infections of Infancy—John W. Kissane, M.D., Malone.

Retention of Urine, Its Causes and Treatment—Ralph E. Powell, M.D., Montreal.

Harry A. Bray, M.D., gave a very interesting address, with illustrated lantern slides taken in connection with his work at the State Hospital.

Captain Francis B. Trudeau, Medical Corps, U.S.A., addressed the meeting at length in connection with his work at various army camps.

COLUMBIA COUNTY MEDICAL SOCIETY.

Semi-Annual Meeting, Kinderhook, N. Y.,
Tuesday, May 13, 1919.

The meeting was called to order at the Kinderhook Hotel.

Aurelius M. Tracy, M.D., Hudson, Leslie G. Taylor, M.D., Hudson, Henry J. Noerling, M.D., Valatie, Charles L. Mosher, M.D., Chatham, were elected members of the Society.

A New Fee Schedule materially advancing the present rates to take effect July 1st, was unanimously adopted.

Interesting and instructive talks on their experiences in Cantonment and with the British Forces, were given by Otis H. Bradley, M.D., Hudson, Henry C. Galster, M.D., Hudson.

Members representing every section of the County were present: Drs. Henry C. Galster, Clark G. Rossman, Otis H. Bradley, Louis Van Hoesen, William D. Collins, Rosslyn P. Harris, Aurelius M. Tracy, Sherwood V. Whitbeck, and Charles R. Skinner of Hudson; George W. Rossman, and Ellwood Oliver of Ancham; Charles L. Nichols, Philmont; Frank C. Mason, Charles L. Mosher of Chatham; Roscoe C. Waterbury, Nathan D. Garnsey, Kinderhook; Henry J. Noerling, Valatie; Nelson H. Mesick, Glenco Mills.

THE MEDICAL SOCIETY OF THE COUNTY OF WASHINGTON.

Semi-Annual Meeting, Comstock, N. Y., Tuesday, May 13, 1919.

Members present were Drs. Robert A. Heenan, Russel C. Paris, Silas J. Banker, Lewis S. Budlong, James T. Park, William C. Cuthbert, Robert C. Davies, Samuel Pashley, Harley Heath, David C. McKenzie, George M. Stillman, Royal E. LaGrange, Zenas Orton, Clifford W. Sumner, Arthur E. Falkenbury, Harry S. Blackfan, William B. Madison, Walter A. Leonard, and Patrick H. Huntington.

Visitors present: Drs. White, E. H. Marsh, Davis Baker, and Mr. Paris.

Charles A. Prescott, M.D., and Patrick Henry Huntington, M.D., were elected to membership.

Resolutions on the death of William B. Melick, M.D., and John Millington, M.D., were adopted.

Resolutions commending the action of our representatives, the Hon. E. R. Norton and Hon. M. Y. Ferris and Speaker Sweet were adopted.

The subject of Health Insurance was discussed and a standing vote taken which was unanimously opposed to any such form of legislation.

Resolutions were then presented and Dr. Rooney not being present, were laid upon the table until afternoon.

At the afternoon session the Health Insurance Resolutions were taken from the table and discussed, and after slight amendment were adopted as follows: All signed but Dr. Paris, who objected to one clause.

Whereas, The medical profession and the people of the State of New York have just escaped the misfortune of having a Compulsory Health Insurance Bill become a law; and

Whereas, We believe that the general public, if well informed as to the working conditions of such a law, would repudiate it by a large majority; and

Whereas, The laborer should and does in most cases, receive such wages as to enable him to care for his family when sick; and

Whereas, Health Insurance does not provide for the poor, or in any way aid in the prevention of disease, while the State Charities Aid and the County Charity authorities do provide hospitals, laboratories, district nurses, and the medical profession give freely of their service, which services might be greatly increased by State moneys that would be needed for Health Insurance; and

Whereas, We repudiate the creed proposed by the Erie County Society, or any form of compromise with the proponents of the Health Insurance Bill; therefore be it

Resolved, That we, the Medical Society of the County of Washington, in regular session, do pledge ourselves to use every effort we can against the enactment of any form of Compulsory Health Insurance Law, and that we reaffirm a former resolution that we will not accept less than our present rates, and that we urge upon the several county societies of the State to take a decided stand in this matter, and that we use every opportunity to urge upon our patients and acquaintances the importance of opposing this legislation; and further be it

Resolved, That as an evidence of our sincerity we affix our signatures to these resolutions, and that they be printed and mailed to every County President and Secretary and the officers of the State Society.

Arthur E. Falkenbury, M.D., then presented a unique method of dressing a fractured clavicle.

The Society then repaired to the operating room and witnessed the administration of salvarsan to four patients and listened to a talk by Dr. Marsh.

George M. Stillman, M.D., presented a paper on some lessons learned on the Draft Board. He mentioned especially the willingness of those who passed, to enter the service, and gave statistics as to conditions of rural and urban population as revealed by the physical examinations.

Clifford W. Sumner, M.D., moved that the fee list be changed to correspond to fees now charged in Fort Edward and Hudson Falls and that cards be printed.

Samuel Pashley, M.D., moved a vote of thanks to Dr. James F. Rooney for his efficient work as Acting Chairman of the Committee on Legislation of the State Society.

THE ONONDAGA MEDICAL SOCIETY.

Regular Meeting, Syracuse, N. Y., Tuesday, May 13, 1919.

The meeting was called to order in the Mizpah Hotel, at 8:30 P. M. About 100 members were present and the meeting was one of the most interesting and enthusiastic ones of the year.

A special committee of five was appointed to study the Health Insurance bills and report at the next regular meeting of the Society.

Owing to the public agitation in regard to the enlargement of the Onondaga Tuberculosis Sanatorium, the County Society went on record by presenting a unanimous resolution before the Board of Supervisors in favor of the enlargement of this sanatorium.

Twenty-six new members were unanimously elected to membership.

Scientific Program.

"Care of the Sick and Wounded in the American Expeditionary Forces," Lieut. Col. Edward S. Van Duyn, Syracuse.

"Dermatology from a Military Point of View," Major Henry A. McGruer, Syracuse.

Owing to the unavoidable absence of Adeson T. Halstead, M.D., Deputy Commissioner of the Department of Narcotic Drug Control, the paper on "Narcotic Drug Laws of New York State," was not presented.

MEDICAL SOCIETY OF THE COUNTY OF SCHOHARIE.

Semi-Annual Meeting, Schoharie, N. Y. Tuesday, May 13, 1919.

The meeting was called to order in the Parrott House, and the present officers were renominated for the ensuing year.

The following motions and resolutions were unanimously passed and adopted:

That our Treasurer be empowered to pay the dues of our members still in the Medical Reserve Corps, U. S. Army.

That our delegate to the State Society, with his alternate, be granted the power of substitution; and

That our delegate, alternate or substitute, be hereby instructed to oppose Compulsory Health Insurance or any other measure having a similar purport, that may be brought before the House of Delegates, of the Medical Society of the State of New York.

At the Scientific Session, Dr. David W. Beard gave a very graphic and interesting talk on "The Medical Man in Camp."

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

A Text-Book of Practical Therapeutics with Especial Reference to the Application of Remedial Measures to Disease and Their Employment upon a rational basis. By Hobert Amory Hare, M.D., B.Sc. Seventeenth Edition, enlarged, thoroughly revised, and largely rewritten. Octavo of 1,023 pages; 145 illustrations and 6 plates. Philadelphia and New York, Lea & Febiger, 1918. Cloth, $5.50.

A Text-Book of Biology for Students in General, Medical and Technical Courses. By William Martin Smallwood, Ph.D. Third Edition, enlarged and thoroughly revised. Octavo of 306 pages; 235 illustrations and 8 plates. Philadelphia and New York, Lea & Febiger, 1918. Cloth, $3.00.

Military Surgery of the Ear, Nose and Throat. By Hanau W. Loeb, M.D., Major Medical Reserve Corps, U.S.A. 16mo of 176 pages. Philadelphia and New York, Lea & Febiger, 1918. Cloth, $1.25. (Medical War Manual No. 8.)

Human Infection Carriers; Their Significance, Recognition and Management. By Charles E. Simon, B.A., M.D. 12mo of 250 pages. Philadelphia and New York, Lea & Febiger, 1919. Cloth, $2.25.

Elementary Bacteriology and Protozoology for the Use of Nurses. By Herbert Fox, M.D. Third Edition, thoroughly revised. 12mo of 222 pages; 68 illustrations and 6 plates. Philadelphia and New York, Lea & Febiger, 1919. Cloth, $1.75.

A Treatise on Orthopaedic Surgery. By Royal Whitman, M.D., M.R.C.S., Eng., F.A.C.S. Sixth Edition, thoroughly revised. Octavo of 914 pages; 767 illustrations. Philadelphia and New York, Lea & Febiger, 1919. Cloth, $7.00.

The Blind, Their Condition, and the Work Being Done for Them in the United States. By Harry Best, Ph.D. Author of "The Deaf." Their Position in Society and the Provision for Their Education in the United States. Published in 1919 by the Macmillan Co. Price, $4.00.

Arquivos De Higiene e Patologia Exóticas. Publicacao Dirigida Pela Escola de Medicina Tropical de Lisboa. Volume VI. Published in 1918 by Imprensa Libanio Da Silva Travessa do Fala-Só, 24 Lisboa. Prix de oe volume, 10 francs.

The Surgical Clinics of Chicago, Volume III, Number 2 (April, 1919). Octavo of 242 pages, 62 illustrations, Philadelphia and London: W. B. Saunders Company. 1919. Published Bi-Monthly: Price per year: Paper, $10.00: Cloth, $14.00.

Le Français Enseigne Par La Methode Intuitive Et Directe. Par. P. Dessagnes, Agrégé de l'Université, Professeur au Lycée Louis-le-Grand et a l'Ecole superieure de Commerce de Paris. Masson et Cie, Editeurs 120, Boulevard Saint-Germain, Paris. 1919. Prix, 5 francs net.

The Control of Hookworm Disease by the Intensive Method. By H. H. Howard, M.D., Director for the West Indies. Publication No. 8. Published by the Rockefeller Foundation, International Health Board, New York. 1919.

The Oxford Medicine, Advance Pages. Edited by Henry A. Christian, Sir James Mackenzie. Volume I, Part 3. Published by the Oxford University Press, New York.

Problems of Fertilization. By Frank Rattray Lillie, Professor of Embryology, University of Chicago. Published by the University of Chicago Press, Chicago. Price, $1.75 net.

Book Reviews

The Disabled Soldier. By Douglas C. McMurtrie, Director Red Cross Institute for Crippled and Disabled Men; Editor, American Journal of Care for Cripples. With an Introduction by Jeremiah Milbank, Macmillan Company, New York, 1919. Price, $2.

The author of this interesting and timely book is well qualified by temperament and experience to present his subject. The reader has the further advantage of prepublication review of important chapters by acknowledged specialists on the subjects treated. An appreciative introduction by Mr. Jeremiah Milbank accompanies the text.

An interesting chapter on past neglect of cripples is given. The book is full of more recent notable work for civil cripples in European countries; and throughout one sees the intensive study which the author has made of the work for reconstruction of War cripples. As the latter problem was earlier presented to European countries, to England, to Australia and to Canada, the remarkable provision made by these countries is more fully given. The third chapter is addressed to the disabled soldier. Appreciation of the fact that he has met his country's call to duty is noted; earnest plea that he shall not fall down, now that his physical disability would seem to handicap him, is made. Many instructive examples are presented of men who have made good in many fields of endeavor in spite of physical disability. The remainder of the book is an elaboration of fields open to specific disabilities; of means which are provided to help the man to fit himself to what may often become a fuller life than formerly might have been his reasonable prospect; of technical difficulties of administration and ways to meet them; of the part to be played by our government, by our colleges and universities, by technical schools, by agricultural schools, by employers, by labor unions and by the men themselves. All is told in an interesting and authoritative manner. From its scope, the development of detail and the national importance of the subject at this time, the book would seem destined to be much quoted and a standard for reference.

The illustrations, which are full and well captioned, are drawn largely from specific work done in foreign countries and in Canada. Walter Truslow.

Intravenous Injection in Wound Shock. Being the Oliver-Sharpey lectures delivered before the Royal College of Physicians of London in May, 1918. By W. M. Bayliss, M.A., D.Sc., F.R.S., London; Chairman of the "Special Committee for Investigation of Surgical Shock and Allied Conditions," appointed by the Medical Research Committee. Longmans, Green and Co., London and New York, 1918.

A cursory glance through this book would tell the observer that it is the product of a physiologist. The illustrations are numerous but consist almost entirely of laboratory curves and tracings.

In a general way the contents may be divided under two heads: First, shock, its phenomena, effects, causes, etc., and second, the various solutions that have been used intravenously in the treatment of shock with a discussion of the reasons why each may or may not be indicated.

This is by no means the pedantic outburst of a laboratory hermit.

It contains information of value to every physician and especially every surgeon. For example: "The blood pressure is best raised by an increased volume of a non-constrictor solution as this ensures an increased blood supply to the tissues."

The author does not believe that acidosis is a potent factor in the production of the phenomena of wound shock, hence sodium bicarbonate solution is not indicated.

Glucose solutions are ruled out because the blood sugar is above normal in shock already.

The one chief thing required in shock is the proper volume and osmotic pressure and this is best obtained, if an artificial solution must be used, by a 6% or 7% solution of gum arabic in .9% sodium chloride solution. This is harmless, can be sterilized and does not increase the viscosity of the blood.

It is easily made by adding 400 c.c. of water to 100 c.c. of mucilage acaciæ (B.P.) with the necessary sodium chloride to make .9%.

The conclusions of the author will appeal to all. He says "If blood is available in sufficient quantities and time and assistance are not wanting, use it by all means." Whatever is used should be used early. The intravenous injection of a pint of gum solution promptly is better than whole human blood on a death bed. Henry F. Graham.

Hospital Accounting and Statistics. Fourth edition. Compiled and arranged by William V. S. Thorne, Treasurer and member of the Board of Managers of the Presbyterian Hospital, of New York; E. P. Dutton & Co., New York, 1918.

The book shows evidence of being written by a man of large affairs, and to cover the book-keeping needs of an institution well endowed and ready to spend a considerable sum of money for the purpose of having an elaborate system of records and statistics. For the ordinary institution which is constantly trying to secure sufficient funds to meet the demands made upon it, one would hesitate to recommend the elaborate system developed by the author. That the book is a masterly effort cannot be denied, but that the system will be widely adopted by institutions is very doubtful, on account of the amount of expert labor required to carry out the plan as outlined in this treatise. R. E. S.

Lice and Their Menace to Man. By Lieut. LL. Lloyd, R.A.M.C. (T), Chief Entomologist in Northern Rhodesia. With a Chapter on Trench Fever by Major W. Byam, R.A.M.C. New York and London. Oxford University Press. 1919.

The subject of vermin-carried disease is a most important one to the medical and sanitary men of any community. At this time when so many soldiers are returning to their homes from regions where sanitary and health conditions have been poor or even worse, the subject of lice and lice-borne disease becomes a matter of much interest. The author has given us a most complete description of this dangerous little animal—its anatomical structure, its mode of living and reproduction, its method of dissemination, and also a complete description of the most approved methods of de-lousing. The entire field has been most carefully and thoroughly studied by the author and is presented in an instructive, readable manner.

The chapters on the three most important louse-borne diseases, relapsing fever, typhus fever, and trench fever are well written and interesting—they prove to us the reason of the author's remark in the preface, that "One of the most urgent sanitary problems of the present and future is therefore the destruction and prevention of lice." The book is well printed in large, clear type on excellent paper and the illustrations are carefully made. It is a book that will repay a careful study. Henry M. Moses.

ber 1 (February 1919). Octavo of 236 pages, 75 illustrations. Philadelphia and London: W. B. Saunders Company. 1919. Published bi-monthly. Price per year: paper, $10; cloth, $14.

Number I of Volume 3, Surgical Clinics of Chicago, contains two interesting articles on Military Surgery as experienced at the Front. A clinical lecture by Dr. Victor D. Lespinasse on Blood Transfusion will repay a careful reading. The remainder of the volume contains a wide assortment of cases in the various fields of Surgery and while many are of the ordinary type the observations made repay the time spent in looking over the article. Altogether the volume is one of the best issued in the series. E. W. S.

The Operative Treatment of Chronic Intestinal Stasis. By Sir W. Arbuthnot Lane, Bart., C.B. Consulting Surgeon to Guy's Hospital, and to the Hospital for Sick Children, Great Ormond Street. Fourth Edition, revised and enlarged. Published by the Oxford University Press, N. Y. C., in 1918.

The fourth edition of this work is much enlarged and its value much enhanced by the fact that the author's theories and experiences are bolstered up by a number of eminent collaborators. Lane's part of the book reads like a novel. His theories in regard to the formation of intestinal bands are clearly set forth, and must be accepted as the best explanation so far advanced. The effects of the contraction of these bands are logically traced to the production of intestinal stasis, peptic ulcer, Graves' disease, Raynaud's disease and even pulmonary tuberculosis! The results of colectomy in these conditions, and in a great variety of other even more surprising lesions, are reported to be such that, if our surgeons could even approximate them, we would be obliged to consider colectomy absolutely indicated in nearly all diseases human flesh is heir to. Unfortunately, mortality statistics have been omitted in the discussions.

While nothing strikingly new or original has been brought out in the chapters on bacteriology and chemistry, the chapters on comparative anatomy and on developmental changes occurring in the individual during life are of intense interest. Adami's chapter gives a moderate, modern view of the present status of intestinal auto-intoxication and of focal infections in the causation of disease, and serves as a valuable check on Lane's over-enthusiasm.

The chapter on the X-Ray findings is illustrated by many well-chosen radiographs. There are also chapters on ophthalmology, dermatology, gynecology and dentistry, each tracing the effects of the stasis in the bowel on the regions discussed. It is a book well worth reading to get the views of the most extreme "auto-intoxicationists." A. A.

Deaths

Philip J. Catoggio, M.D., New York City, died May 27, 1919.

Frank L. Cooley, M.D., Hannibal Center, died March 31, 1919.

M. Simbad Gabriel, M.D., New York City, died June 3, 1919.

Alexander Lyle, M.D., New York City, died May 23, 1919.

Edward N. Pfohl, M.D., Buffalo, died April 15, 1919.

Warren Schoonover, M.D., New York City, died June 3, 1919.

Frederick Weisbrod, M.D., Brooklyn, died May 9, 1919.

Frederic A. Williams, M.D., New York City, died May 2, 1919.

NEW YORK STATE JOURNAL OF MEDICINE

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ORIGINAL ARTICLES

ETIOLOGY OF THE PNEUMONIAS.*

By RUFUS COLE, M.D.,
NEW YORK CITY.

WHILE certain objections may be raised to employing the term "the pneumonias," I was glad when I was asked to speak in this symposium that this subject was suggested, because it emphasizes a most important point; namely, that pneumonia, even lobar pneumonia, should not be considered a single typical infectious disease.

As you all know, the term "pneumonia" arose first as a clinical term, though with an anatomical significance, which at first, it is true, was mainly assumed. Later, with the development of pathological anatomy the anatomical significance of the term became emphasized so that in its present usage it means first an inflammation of the lungs and only secondarily the reaction of the body to the parasites inciting the inflammatory reaction. In the minds of many, pneumonia still signifies a pathological lesion, not a disease. In comparatively recent years, however, it has been shown that a peculiar group of symptoms and the massive form of diffuse fibrinous inflammation which we call lobar are always associated. We now also know that when this clinical-pathological complex arises there are always present in the lung bacteria of one great group called pneumococcus.

It has been shown, moreover, that not all the pneumococci present in this disease are identical, and by special methods it has been found possible to group them into at least four types or groups. This became important for us as physicians, only as this fact affects our attempts at prevention and cure. It is not very important for us, for instance, that certain strains of diphtheria bacilli show peculiar morphological or cultural characteristics since the reaction of the human body is the same to all strains and since all strains are identical in their immunological reactions; all react to the same serum.

The conditions are different with pneumococci, however, for each of three of the types is very specific in its immune reactions. Therefore, from the standpoint of specific cure and prevention, we would be justified, if it were possible, in classifying or grouping the cases, using the type of pneumococcus concerned as a basis. The relative frequency of occurrence of the different types of pneumococci in the lungs in acute lobar pneumonia is shown by our statistics at the Hospital of The Rockefeller Institute, where among about 700 cases of lobar pneumonia Type I pneumococci were present in 35 per cent, Type II in 30 per cent, Type III in 10 per cent, and pneumococci of the fourth group in 25 per cent of the cases. We are justified, therefore, in considering acute lobar pneumonia as an acute infectious disease, or better as a group of infectious diseases with similar clinical manifestations and characteristic lung lesions, in which lesions pneumococci of Types I, II, III or IV are always present, and I have so indicated on the chart which I have arranged. (Chart I.)

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 6, 1919.

CHART I.

Bacteria Present in Pneumonia.

Broncho-pneumonia.
Lobular pneumonia.
Interstitial broncho-pneumonia.
Atypical forms with abscess formation, etc.

(?) Pneumococcus, Type I.
(?) " " II.
" " II, atypical.
" " III.
" " IV.
} Typical Lobar Pneumonia.

Bacterium pneumoniæ (Friedländer's bacillus).
Bacillus influenzæ.
Streptococcus hemolyticus.
(?) Streptococcus non-hemolyticus.
Staphylococcus aureus.
(?) Staphylococcus albus.
Other bacteria, as
Bacillus pestis, B. typhosus, etc.

When we leave this part of our subject, the conditions become much more complex and difficult to analyze. We now leave the discussion of the etiology of a specific disease in which there has been shown to be harmony between the physiologic reactions on the part of the body, the pathological anatomy and the bacteria present, and we now have to discuss the relation of various bacteria not to a disease primarily but to pathological lesions. I cannot here take the time to discuss the various forms of anatomical changes in inflammation of the lung. I have indicated certain of the terms employed on the chart. In general, these lesions seem to be less specific in character, that is, to bear less relation to the bacteria present, than does the lesion spoken of as lobar.

The fact that pneumococci are not only found in the lung lesions of lobar pneumonia, but may be present in the more non-specific lung inflammations, brings a certain amount of confusion into the subject. It has long been known that pneumococci may be associated with the secondary broncho-pneumonia of children and with so-called terminal broncho-penumonia. With the appearance during the past few years of apparently primary broncho-pneumonia in adults, it has also been found that pneumococci may be the only organisms present in the lesions. In few cases so far studied, however, have the pneumococci present been of the more specific parasitic Types I and II. Personally, I have not seen these organisms exclusively associated with these lesions, but for the present the matter must remain undecided.

So far as Friedländer's bacillus is concerned, its exact relation to pneumonia is not certain. This is not a single species but is a group of organisms, members of which are not infrequently found in the normal mouth and accessory sinuses. First described as the chief bacterium concerned in lobar pneumonia, it was soon found that it occurred relatively seldom in lung lesions. In many instances its presence in the inflamed lung is manifestly simply due to its growth in a lung already invaded by certain other micro-organisms. In certain cases, however, study has indicated strongly that it was the only bacterium concerned. For instance, in one case occurring in the Hospital of The Rockefeller Institute, this organism was isolated from material obtained from the lung on puncture on the first day, and in another case from the circulating blood on the fourth day.

Nevertheless, the number of cases of pneumonia associated with this organism must be relatively few. Among 844 cases at the Hospital of The Rockefeller Institute, in only three did this organism seem to be the only or important one concerned. Both the lesions and the clinical features in this infection differ somewhat from those of typical lobar pneumonia.

Staphylococcus infection of the lung probably occurs with greater frequency than has been recognized in the past, and our experience strongly suggests that in certain cases of pulmonary infection staphylococcus aureus may be the only bacterium concerned. In the winter of 1914-15, I saw two cases and in 1915-16 one case in which the relation of this organism to primary lung infection seemed quite definite. In one case, that of a schoolgirl, aged 14, previously perfectly well, there occurred a sudden onset of illness, with very early signs of lung involvement, peculiar sputum, which we have come to associate with this form of infection, containing staphylococci, and on the fourth day staphylococci were cultivated from material obtained by lung puncture and from the blood. At autopsy the infection seemed to be primarily pulmonary. In these cases there is a great tendency to necrosis of lung tissue with the formation of multiple abscess. As to the relation of these bacteria to the pneumonia of influenza during the past winter I shall speak later.

The association of streptococcus and B. influenzæ with the lung lesions of broncho-pneumonia has long been recognized. It must be remembered, however, that in the past bronchopneumonia occurring in a previously healthy adult has been comparatively rare. In 549 cases of apparently primary pneumonia studied by me before 1917, in six cases B. influenzæ, and in seven cases streptococci were the only organisms that could be isolated and these organisms seemed to be the only ones related to the disease processes in the respective groups of cases. These figures must be accepted with some reservation, however, for in no case was the demonstration of the primary and independent relationship absolutely convincing.

It will be noted that in the chart and in my remarks I have confined myself solely to the discussion of the bacteria present in pneumonia and have delayed my discussion of their etiologic significance until the present.

What is meant by the etiology of a disease, as I understand it, is the event or train of events that disturbs that orderly physiologic balance in an individual that we speak of as health. When we consider the etiology of pneumonia we want to know just why in an individual the orderly course of events is altered, and to know this we must also know why another individual under exactly the same circumstances remains healthy. In the case of the specific infectious diseases the growth of the specific micro-organism within or on the surface of the body is an essential factor. The disease cannot occur without the presence of the specific micro-organism. In certain instances its presence seems to be the only factor, but with natural infection, this is very rare. A single plague bacillus rubbed into the skin of rats may invariably result in infection. But in the natural occurrence of plague in human beings, the greatest amount of variation in the occurrence and severity of the disease exists. At one time the same bacteria may be responsible for an epidemic of the pneumonic type of plague and at another of the bubonic form. At one time and place the disease may occur with the greatest virulence, at another it is mild. In one place practically all individuals are attacked, in another very few. It is evident, therefore, that even in plague, one of the most specific and contagious diseases, other factors besides the presence of the organisms are concerned in etiology.

In lobar pneumonia it was formerly held that the presence of the pneumococcus was but the culminating event in a series of phenomena leading up to the onset of the disease. As long as all pneumococci were held to be identical, we were forced to that view, for pneumococci are known to be frequent inhabitants of the normal mouth, and it was generally believed that infection was autogenous, that is, the individual became infected with the organism already present in his mouth because other circumstances, unrelated to the organism, made that possible. However, it has been demonstrated that pneumococci of Types I and II are not ordinarily present in normal mouths but only in the mouths of those sick of the disease and occasionally in the mouths of persons closely in contact with the sick. The importance of mere presence of the organisms, therefore, as far as pneumonia due to pneumococci of Types I and II is concerned, becomes greater. This point of view has recently been greatly supported by the work of Blake and Cecil. They have been able to produce typical lobar pneumonia in monkeys by the simple injection into the trachea of very small amounts of cultures of pneumococcus Type I, even as little as 0.001 cc., inserting the needle between the tracheal cartilages. Since in the previous production of pneumonia in animals marked alterations in the conditions in the lungs had been produced by the simultaneous injection of considerable amounts of fluid directly into the bronchi, the significance of this demonstration is considerable. It is not conceivable, however, that even in this type of pneumonia in man the arrival of organisms of this type in the lungs is the only factor concerned.

In the second chart I have made an outline of certain other factors concerning which we have some knowledge. There may be and probably are many additional factors of which at present we are ignorant. (Chart II.)

Chart II.

Factors Concerned in Occurrence of Pneumonia.

1. Factors relating to the bacteria.
   (a) Variations in virulence.
   (b) Size of dosage.
2. Factors relating to the individual.
   (a) Natural immunity.
   (b) Acquired immunity.
   (c) Change in local resistance.
      Foreign bodies, chest injuries, etc.
   (d) Variations in general or local resistance due to
      Age.
      Primary infections—coryza, influenza, measles, etc.
      Hunger, fatigue, exposure, etc.
      Alcohol.
      Ether.
3. Factors affecting transmission of bacteria.
   (a) Crowding.
   (b) Habits of individuals.
   (c) Travel.
4. Factors with unknown modes of action.
   (a) Temperature.
   (b) Altitude.
   (c) Dust.

I have only time to draw your attention to a few of these factors so far as they relate to lobar pneumonia.

In the first place, animal experimentation has shown that in this whole group of bacteria concerned in pulmonary infections, the properties on which *virulence* depend are extremely liable. For instance, pneumococci may by animal passage be rendered extremely virulent for mice, but on artificial cultivation they may lose this property just as rapidly. A very striking fact, however, is that in general (though this is not always true) pneumococci of Types I and II, the specific types, tend to maintain their virulence better than those of Type IV. This may explain why these types have come to be so exclusively associated with disease. It is significant in this connection that in the epidemics of lobar pneumonia so far carefully studied, pneumococci of these two fixed types have been the ones concerned.

We have little knowledge concerning the *natural immunity* of man to pneumococci, though reasoning from analogy it is probable that, in general, man is relatively little susceptible. This means that under ordinary circumstances few persons would acquire the disease, even though all were inoculated. It is a striking fact that both in man and animals there exists a considerable degree of individual immunity to natural infection with the micro-organisms of most of the diseases from which they suffer. This is best seen in animals, where artificial measures of prevention obscure the features less than is the case with man.

Pleuro-pneumonia of cattle is a very contagious disease, yet it is generally stated that when a herd, in which acquired immunity can be ruled out, becomes infected, practically never do all the cattle suffer from the disease; always a third or a fourth of them escape.

In a common disease like pneumonia *acquired immunity* must play a large rôle in determining whether or not one suffers from the disease. The importance of this factor has been assumed, probably quite correctly, in explaining the great incidence of pneumonia among individuals brought into intimate contact with new individuals in a new environment.

It is well known that pneumococci may induce mild local infections as well as the severe general disease, lobar pneumonia. Therefore, in time, most persons may acquire some degree of immunity to the pneumococci common in their environment. Let these persons, however, be brought into contact with an entirely new group of people, who carry other varieties of pneumococci. Possessing no acquired immunity to these newly encountered strains, these persons may suffer severely from pneumonia. This has been held to explain the great frequency of occurrence of pneumonia among the native miners on the Rand in South Africa, as long as new natives were constantly being imported. Since this practice has been stopped and the population rendered fairly permanent, a great lessening of incidence of pneumonia has occurred. The same thing was true in Panama. At first, when new native laborers were being imported, the disease prevailed to a very great extent. Later it disappeared. Vaughn has shown that the incidence of disease among troops from the south, most of them from rural districts, was largely in excess of that among the northern soldiers, many of whom were from cities and therefore had been in contact with all sorts of disease. The explanation of increased incidence of measles among the southern country boys is obvious, but probably the same factor, namely, the lack of acquired immunity, is also important in explaining their increased susceptibility to pneumonia, though other factors, such as those mentioned under 3, may also be of significance.

Time does not permit me to discuss further the other factors concerned in the etiology of acute lobar pneumonia, though many important and interesting facts have lately been discovered which have a direct bearing on this question. The point which I wish to impress is that even in the most characteristic and specific of the acute lung infections, it is not sufficient nor correct to say that it is caused by pneumococcus. The presence of the bacteria is but one of the many factors concerned in the etiology.

While this is true of lobar pneumonia, it is still more true of the less specific and typical forms of disease associated with acute pulmonary infections. Referring to the points which I have noted on the chart, I should like to discuss briefly the atypical pneumonia which has been so prevalent during the past two years. In November and December, 1917, among the soldiers suffering from pneumonia who were admitted to the Hospital of The Rockefeller Institute, there were five who were found to be suffering from atypical pneumonia. Studies of the sputum and cultures from the lungs indicated that the infectious agents concerned in four of these cases were hemolytic streptococci, and in one case, staphylococcus aureus. None of these cases had lately suffered from measles. Since in all our previous experience we had seen very few similar cases, the occurrence of all these cases in two months aroused our very great interest. At the same time there began to be reported at the Surgeon General's Office a very great prevalence of pneumonia at the various camps. In many of the camps measles was also prevailing and many of the cases of pneumonia occurred coincidently with or followed this disease. In February, 1918, I was made a member of a commission sent by the Surgeon General to

Fort Sam Houston, Texas, to investigate the pneumonia present there. Report of this study has been published, and today I only desire to refer to certain of our observations in relation to etiology. We found many cases of typical lobar pneumonia, but in addition very many cases with atypical pneumonia and the bacteria found in these cases were, with great constancy, hemolytic streptococci. In many of these cases the pneumonia occurred with or followed measles; in others the streptococcus infection apparently complicated or followed acute lobar pneumonia. In some instances, however, the streptococcus pulmonary infection apparently started independently of any other disease. The lesions in the lungs of these cases infected with S. hemolyticus showed certain characteristic features. The clinical features also differed from those of acute lobar pneumonia, and empyema was an extremely frequent complication. Reports of similar findings in other camps were reported within a short time. During the winter soldiers were constantly admitted to the Hospital of The Rockefeller Institute from nearby camps, mostly from Camp Mills. Each month there appeared one or two of the streptococcus cases until March, when 31 of these cases were admitted. During April there were 2 cases and during May, 3, and none during the remainder of the summer. Altogether during the winter there were 43 such cases admitted to the Hospital of The Rockefeller Institute, 10 of these being civilians. We made every effort not to admit any patients suffering, or convalescent, from measles and as no cases of measles developed in the wards through contact with these patients, it is evident that measles was not an important factor in our cases. In certain instances evidence was obtained that a primary pneumococcus lobar pneumonia had been originally present. In other cases the evidence was strongly against this supposition. From my own experience, therefore, and from that of other observers, we may conclude that during the winter of 1917-18 there occurred in the camps, and to a lesser extent among civilians, a very large number of cases of infection of the lungs with Streptococcus hemolyticus, in certain places this infection taking on an epidemic character. The explanation of the greatly increased frequency of occurrence of this form of infection is, of course, not entirely clear, but we have certain evidence which strongly indicates the following course of events. In the first place, measles became very prevalent among the soldiers, and this disease undoubtedly lowers resistance to infection of the lungs with streptococci (2d). Crowding, especially of the measles cases, facilitated the transfer of the infection (3a). Rapid serial transfer of any infectious agent through a given host is known to be the best way to increase its virulence for that host (1a). The men were allowed to leave the wards while still carriers of the virulent bacteria and many of them indulging in improper habits (3b) and being crowded (3a) with other men in barracks, the latter, suffering unaccustomed fatigue, exposure, etc. (2d), rapidly became infected. The organism finally so increased in virulence apparently (1a) that their mere presence in the trachea of otherwise healthy but susceptible individuals might be followed by disease. There may have been other factors of which we have no knowledge, and it is impossible to estimate the exact relative value of those I have mentioned. We have considerable evidence, however, which justifies us in assuming the vicious circle I have described.

Under these circumstances it is not sufficient to say that the etiologic agent was S. hemolyticus. Many other factors were concerned and the etiology in the individual case, as well as the explanation of the epidemic, was complex.

The difficulty of offering any adequate explanation for the pneumonia occurring during the past winter is still more difficult, and I am only going to offer a few suggestions indicating that possibly the matter is not quite so simple as some would have it, and that in the final solution, more than one factor must be taken into consideration. It is impossible at the present time to discuss adequately the etiology of influenza. The rapid spread of the epidemic can hardly be explained except on the assumption that the essential factor was a single infectious agent spreading among a susceptible population. The only two suggestions so far made as to the nature of this agent which are supported by any reliable evidence are, first, that it is an ultra-microscopic organism or a filterable virus, and second, that it is B. influenzæ. Some evidence in favor of the first supposition has already been presented by Nicolle and Lebailly, Leschke, v. Angerer, Gibson and others. The evidence so far presented, however, cannot be considered convincing.

In regard to the second view, the actual proof of the primary relationship of B. influenzæ is also lacking, as in a considerable number of cases this organism has not been demonstrated, and so far it has not been possible to reproduce the disease in animals. Whatever may be the nature of the primary infectious agent, however, the serious character of the disease is undoubtedly related to the pneumonia which may occur. That the disease itself is not necessarily severe is known from the reports of the epidemic as it occurred in the previous year in Europe, and from the history of earlier epidemics. It becomes severe, however, when pneumonia arises. In all the cases with pneumonia which have come to autopsy organisms of one or more of the following species have been present: Bacillus influenzæ, pneumococcus (usually Type IV), streptococcus or staphylococcus. It seems likely, therefore, that they have some relation to the disease process, especially since in some cases cultures were obtained by lung puncture very early in the disease. In a considerable number of the cases in certain series, especially in the cases studied by Wolbach, even in those instances in which other organisms were present in the lung lesions, B. influenzæ was isolated as well. Wolbach from his pathological study thinks that in the pneumonia of influenza "we are dealing with a distinctive pathology," and it is evident that he is strongly of the opinion that this lesion is specifically related to the presence of B. influenzæ. He does not disregard secondary infections by the other organisms I have mentioned, however, and thinks their growth in the lungs may modify the pathological picture and, I assume, the clinical picture as well. On the other hand, other good observers, including MacCallum, have not been able to isolate influenza bacilli from many lungs from cases of influenza showing lesions of pneumonia. MacCallum believes that the conditions are exactly analogous to those in measles, and that some other virus so lowers resistance that secondary infection with B. influenzæ, or with one of the other organisms which I have mentioned, may occur, this infection being followed by pneumonia, the lesions showing distinctive features, however, depending upon the variety of the secondary infecting organisms, but modified to some extent by the greatly lowered resistance, which allows very large numbers of the bacteria to grow.

My own observations on the pathology of the lung lesions do not permit me to offer any important additional evidence. My clinical experience, however, leads me to believe that lung lesions have been present, in New York, at least, in a larger proportion of the cases of the present epidemic than is generally considered to be the case. In most cases the lung lesion seemed to be a progressive one, the exact time of its onset being impossible to determine. In all of our cases coming to autopsy, staphylococci, streptococci or pneumococci were cultivated and in most cases B. influenzæ as well, the latter, however, never alone. The relative frequency of staphylococcus infections in our cases during this epidemic should be mentioned. In 11 cases the association of this organism was demonstrated either by lung puncture, by culture from empyemal fluid or by cultures at autopsy. Chickering and Park have also drawn attention to this type of infection occurring in the cases at Camp Jackson. Of the 385 deaths occurring among a series of 1,409 cases of pneumonia in influenza, 153 were found to be associated with the presence of Staphylococcus aureus in the lungs. Whatever may be the organism primarily concerned in influenza, therefore, it seems not improbable that the high mortality in the late epidemic is largely to be ascribed to infection with one or other of these four micro-organisms. In view of the occurrences of the preceding winter, 1917-18, which I have described, one cannot help believing that the events of that winter played an important part in the present epidemic of influenza, and that the same factors to which I drew attention in considering that epidemic should not be overlooked in our consideration of the present one. It is not unlikely that the high mortality of the past winter was related to the wide distribution of organisms of high virulence, to the conditions favoring low resistance on the part of individuals, especially soldiers, and to the existence of the unusual circumstances (war, increased travel) which favored the spread of pathogenic bacteria. How much of a rôle these same factors played in the occurrence of influenza must be left for the present unanswered. If, as is still possible, the specific agent in influenza is B. influenzæ, these factors probably played a most important part.

The chief point which I have endeavored to present in this discussion is that in considering the etiology of pneumonia we cannot consider only the pathogenic micro-organisms. Many other factors must also be taken into account. In few cases of pneumonia, possibly in none, does the disease occur simply because the pathogenic micro-organism gains access to the lung. A person suffers from pneumonia as he does from other accidents, through a combination of circumstances. Moreover, epidemics also arise when a proper combination of circumstances occur. By focusing attention on one factor alone the explanation sought for may not be found.

Discussion.

Dr. Augustus B. Wadsworth, Albany: I am deeply interested in Dr. Cole's presentation of the importance of etiological factors in the development of pneumonia. I think that nearly every one puts too much stress upon the importance of the inciting agent of the disease and allows other factors to fall into the background. These conditions affect either the virulence of the inciting agent or the susceptibility of the person. The virulence of the inciting agent varies qualitatively and quantitatively in different diseases. In diphtheria there is a marked toxic action of the poison of the diphtheria bacillus and but comparatively little parasitic invasion of the organism. In pneumonia the parasitic development of the pneumococcus is marked and there are toxic symptoms, but no one has yet been able to recognize the poison of the pneumococcus. Many conditions affect the virulence of the pneumococcus. It is of special interest to note that recently in my laboratory Miss Kirkbride has determined the fact that the virulence of the pneumococcus might be increased by simple, rapid cultivation in broth; that is, a nonvirulent pneumococcus, in the course of its growth in a culture during a period of twenty-four hours regains its virulence after six to eight hours' growth and loses it again at the end of twenty-four hours' growth. Thus the rate of growth and the vegetative power of organisms are apparently important factors. Susceptibility of the individual is also important, as is clearly emphasized in the experimental study of the susceptibility of different animals to pneumonia and the types of lesion that develop in them. In animals that are less susceptible the lesions induced in the lung approximate the lobar type more closely than in the more susceptible animals, who apparently develop the bronchopneumonic type of lesion. The lung lesion in pneumonia is really an expression of the power of the animal tissues to react to the poison: with slight poisoning the reaction is slight, with increased toxicity the reaction is increased until the tissues are overwhelmed, and then the degree of reaction diminishes. Thus we recognize clinically mild infections of the bronchopneumonic type and severer infections of the lobar type and extremely virulent infections of the bronchopneumonic type. The balance between these two conditions—virulence on the one hand and tissue susceptibility on the other—must be considered. Susceptibility is often expressed in terms of resistance, but the term resistance can only be used in this sense figuratively. The skin and also the lungs to a certain extent form a barrier to infection. Experimentally, infection is less apt to develop when the agent is inoculated into the trachea than when inoculated into the circulation, but apart from this the tissues do not offer resistance to infection but form a favorable or an unfavorable medium for the growth of the pathogenic bacteria.

In influenza the marked toxemia and prostration and the character of the lesions of the lungs are all indicative of greatly increased susceptibility to infection. The types of pneumonia that have been found at autopsy of fatal cases of influenza have been of the bronchopneumonic type almost invariably; and although various incitants of pneumonia, the pneumococcus, streptococcus and influenza bacillus, have been found to be present, it is evident that from whatever point of view influenza-pneumonia is studied, it is a characteristic disease. Pathologically and clinically the disease is distinct. Pneumococcus and streptococcus infections undoubtedly occur as secondary or intercurrent infections, but the character of the disease reactions which they incite in the lung and the character of the disease as it is observed clinically at the bedside are clearly masked or dominated by the influenzal infection.

Where mention is made of early hematogenous infection in pneumonia, I assume that the doctor does not mean that the pneumococci were carried to the lung in the blood stream, but that the organisms reached the blood stream from the air spaces. Comparatively few investigators have offered any evidence that lobar pneumonia develops from hematogenous infection, and such evidence has been very generally discredited by the results of careful experimental study.

Antipneumococcus immune substances can be demonstrated in the blood serum in vitro under carefully controlled conditions of experiment. Pneumococci will develop rapidly in immune serum if cultivated at 37° C., but at 41° C. their growth is inhibited and they are destroyed rapidly by bacteriolysis. Pigeons with a temperature of over 41° C. are not susceptible to infection.

Laboratories of the New York State Department of Health have distributed antipneumococcus serum for more than four years and the results as given in statistics that have been reported have not been very encouraging and have clearly shown that serum treatment of pneumonia in this state is not very satisfactorily carried out. At first the statistics recorded a higher mortality in the cases that were treated than in those that were not treated because physicians invariably waited until an unfavorable prognosis was apparent before beginning serum treatment; and furthermore the records show that many cases were inadequately treated with very small doses of serum. Recent statistics are more encouraging, but there is still much room for improvement before the serum treatment of pneumonia will be placed on a basis comparable with the best institutions. For example, during the epidemic of pneumonia at Camp Wheeler, 72 cases were treated with serum from the New York State Department of Health. Only 2 cases died, a mortality of 2.8 per cent. The mortality of all cases treated was 20 per cent, and of the untreated cases nearly 28 per cent. In the hospital of the Rockefeller Institute the mortality has been lowered by serum treatment to 7 per cent. In the principal centers, such as Buffalo and Rochester, where the serum treatment of pneumonia has been developed longest, a marked improvement is apparent. It is hoped that now that the war is over the serum treatment of pneumonia will be carried out with greater care by all the physicians of the state.

INFLUENZA.*

By ALEXANDER LAMBERT, M.D.,
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It is curious how short is the general medical memory, and how the experience of one individual dies with him and is so little transmitted from one physician to another. To those who have not yet reached old age and who are still active in the profession, the experience has come of seeing at least three epidemics of influenza, two of which were world-wide, and yet each time that this disease has appeared it seems to be unrecognized by the majority of physicians until the epidemic has well-nigh started on its downward grade, and all previous experience with the disease seems to have been forgotten.

This is the impression that one obtains on reading the literature regarding influenza. It is accurately known in recorded literature that this disease has been epidemic in the world since 1137, and has, at various times in each century, overspread the world, usually spreading from East to West. All writers on the subject seem to agree on two peculiarities—that, of all epidemic diseases, in each recurring explosion it develops the truest to form of any of the transmissible diseases. Its epidemics have, however, differed somewhat in the prevalence of their tendency to pneumonia or in their tendency to intestinal forms of inflammation. Dr. Theophilus Thompson, writing in the middle of the last century, makes these pertinent remarks: "Influenza, the epidemic to the description of which this volume is devoted, possesses a special interest, being of all epidemics the most extensively diffused, and apparently the least liable to essential modification, either by appreciable atmospheric changes, or by hygienic conditions under the control of man. It is not like smallpox, communicable by inoculation; and however its fatality may be influenced by defective drainage, it is not, like typhoid, traceable to this neglect as its cause. Unlike cholera, it outstrips in its course the speed of human intercourse. It does not, like plague, desert for ages a country which it has once afflicted, nor is it accustomed, like the sweating sickness, in any marked manner to limit its attack to particular nations, or races of mankind. There is a grandeur in its constancy and immutability superior to the influence of national habits." Thompson also makes the wise generalization that "during the prevalence of influenza the mortality is usually increased, often to a very remarkable degree; the cause of influenza, independently of its agency in producing characteristic symptoms, appearing to exert a power to modify any pre-existing disease with which it may combine; to impair extensively the vital energy, so as to increase, in the population of an affected district, the liability to contract other diseases; and also to lessen the ability to resist any degree of fatal tendency which such concurrent diseases may possess."

The following description by Dr. Thomas Short of the epidemic of influenza in 1510 will well be recognized as applicable to the disease today: "The disease called coccoluche, or coccolucio (because the sick wore a cap or covering close all over their heads), came from the island Melite, in Africa, into Sicily. . . . It attacked at once, and raged all over Europe, not missing a family and scarce a person. A grievous pain of the head, heaviness, difficulty of breathing, hoarseness, loss of strength and appetite, restlessness, watchings, from a terrible tearing cough. Presently succeeded a chillness, and so a violent cough, that many were in danger of suffocation. The first days it was without spitting; but about the seventh or eighth day, much viscid phlegm was spit up. Others (though fewer), spit only water and froth. When they began to spit, cough and shortness of breath were easier. None died, except some children. In some, it went off with a looseness; in others, by sweating. Bleeding and purging did hurt. Bole armoniac was chiefly useful, with oily lintus's, pectoral troches, and decoctions. Where blood was let, the disease proved malignant and pestilential, being attended with a violent, cruel and unheard-of malignity, and made bad work."

Using the medical terminology of today, we would say that it is a disease characterized by intense headache, pain in the bones and muscles, especially the muscles of the back, with fever often as high as 104, and a prostration out of all proportion to the severity of the symptoms. There is a conjunctivitis and a coryza, a pharyngitis, and a soreness of the fauces, which, probably in the majority of the cases, develops into a bronchitis of greater or less intensity. Sometimes there is a rash. Recovery takes place, if uncomplicated by pneumonia, in a few days. The cough is extremely distressing, as it occurs in paroxysms causing intense muscular pain, this pain being located along the margin of the ribs, or substernal, even in the pneumonic cases, and not usually giving the pain in the side like the pleurisy of a primary pneumococcus pneumonia. This may be considered as an average, or standard, description of the majority of cases, in which, while the recovery from the symptoms of the disease would take place in a few days, the restoration from the intense exhaustion occurs much more slowly, and in mild cases it is this peculiar, overwhelming exhaustion that differentiates it from other infections of the catarrhal group affecting the upper respiratory passages.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 6, 1919.

In some cases reported, the severity of the infection is such that the disease, producing focal infection in the rectus abdominalis muscles, has caused such degenerative lesions that, on postmortem examination, these muscles have been found ruptured. Other severe forms of the disease show such general intoxication that the patients sink into a state of exhaustion and stupor, with soft, low-tension, very frequent pulse, and a low, muttering delirium.

Usually, it is the robust young people that are more predominantly attacked, rather than the aged or the children. Again, in a recrudescence of the epidemic, after it has gone through the vigorous youth, it seems to attack more the aged and the very young. This peculiarity is a noticeable feature, and one that has been remarked upon by many observers in many epidemics. It is often stated that one attack does not confer immunity against another. This, however, is of doubtful accuracy. The disease has the peculiarity of remaining in the sinuses of the upper air-passages and reinfecting the same patient many times, so that what seems like a lack of immunity is really a recrudescence of the disease in chronic carriers. As we shall see later, it seems possible, by inoculation, to protect against this disease, and if it is possible to obtain immunity by inoculation, there must be in existence, besides the natural immunity that some people possess to infectious diseases, some amount of acquired immunity which one attack may have conferred. How long this specific immunity lasts it is not possible, at this time, to state definitely.

The transmission of the disease, while supposed to be more rapid than human intercourse allows, is not truly so compared with the modern methods of transportation. It is a disease that spreads by the droplet infection, from the sneezing and coughing of one person towards another, and infecting the air which is breathed in. Or, as was pointed out by Maxcy, infection can pass through the lacrimal sac into the nose, since organisms introduced into the conjunctival sac may be recovered from the nose in five minutes, from the throat in fifteen. Most of us fail to realize that the eyes offer a relatively large surface area for the reception of droplets sprayed from the mouths of other persons, and though a mask over the nose and mouth may protect, the eyes offer a possible line of communication of infection for the respiratory diseases.

The incubation of the disease seems to be shown, by this last epidemic, to be from 36 to 48 hours. The specific infecting agent of the disease is said by some to be the influenza bacillus of Pfeiffer. Others do not accept this bacterium as the infecting agent, and believe that it is due to some minute, filterable virus, which may be either that described by certain English writers, or yet to be found. In favor of Pfeiffer's bacillus it may be said that it is found in the sputum in enormous numbers, in certain cases suffering from influenza. It has been found circulating in the blood during an attack, and, further, in the spinal fluid of other cases which showed influenzal meningitis. It is a small bacillus, growing only in the presence of hemoglobin in the nutrient media, and seeming to grow best on media when accompanied by pneumococcus or micrococcus catarrhalis. Its colonies are small and glistening, and as colorless as clear water. This germ is not easy to cultivate unless the proper medium is at hand and the proper technique followed, but the more the bacteriologic technique of the investigators has been improved, the greater are the number of reports in which this germ has been found in the pulmonary secretions, during the recent epidemic.

On the other hand, so many observers reported, in the early part of the recent epidemic, that this germ was not present that there have been grave doubts thrown upon its causal relationship to the disease. It is also to be remembered that Pfeiffer did not discover this bacillus until after the epidemic of 1890 had passed.

The filterable virus, as described by English authors, is a small, coccus-like form, about 0.15μ to 0.5μ in diameter. It is Gram-positive, and passes through the average and coarse Berkefeld filters and through the Massen porcelain filters. Apparently it does not pass through the finest and closest meshed filters. This report is by Bradford, Bashford and Wilson, of the English army, and they describe it as being an anaërobe that resists heating to 56° C. for 30 minutes. They have isolated it by culture from the blood in six out of nine cases examined, from the sputum in six out of six, and from the pleural fluid of all four examined. They say that this organism can only be grown from the blood and from exudates, but it can also be seen in stained films prepared from exudates—for example, sputum, pleural fluid, and cerebro-spinal fluid. When injected into guinea pigs and monkeys, it produced extensive lobular pneumonia with hemorrhages, some nephritis, and myocardial and hepatic lesions. Nicole and Labailly, in Paris, diluting influenza sputum with salt solution and then filtering it, obtained in the filtrate of a Chamberland filter some form of virus which produced typical influenza in volunteers who were injected subcutaneously with this filtrate. They claim that the virus does not occur in the blood either in man or monkeys, and that the infective agent of influenza is a filter passer. The experiments as quoted are not sufficient to be conclusive.

Gibson, Bowman and Connor, in a report to the English Medical Research Committee, inoculated monkeys with filtered influenza sputum, and they describe the organisms obtained as small coccoid bodies, varying in diameter from 1μ to 2μ generally single but often taking on a diplococcal arrangement, sometimes occurring in small masses. The number of their experiments is not believed to be sufficient to justify the drawing of final conclusions, but it is believed that the proportion of positive results obtained is significant, and that the pathological lesions in what may be called experimental influenza in animals closely resemble those seen in the lungs of men. These minute coccoid organisms, grown by Noguchi's cultural methods, have been carried by these experimenters to the third generation, and these cultures, when inoculated into animals, produced typical "experimental influenzal" lesions, and cultures can be recovered again from the animals inoculated. Their final conclusion is that the organism isolated by them is capable of passing through a filter, and that in all probability it is the cause of influenza as seen today.

There is one feature about the Pfeiffer bacillus which is noticed by many observers, and that is its pleomorphism—that is, while usually a very small bacillus, it grows in other very small forms, so small that, in certain stages of its growth, it is described as no larger than the description of the filterable viruses referred to above. It may well be that it is a facultative anaërobe and that not only may its virulence vary with the conditions of its growth, with or without oxygen, but also its size and form. Many observers have mentioned the improved vigor of the growth of Pfeiffer bacillus when grown symbiotically with other germs, these other germs being especially well-known aërobes. The possibility that the different germs described may be various forms of one organism is further substantiated by the fact that in this recent epidemic, in inoculation experiments with Pfeiffer bacillus, there seems to have been produced, in this country and in England, a certain amount of immunization against the occurrence of the disease, and some degree of protection. This has been especially emphasized by W. Ford Robertson, of Scotland, because of both his protective and curative inoculations. At present, therefore, the causal agent is still under discussion.

One fact which has been brought out most clearly by the recent epidemic of influenza is that most pneumonias accompanying it seem to be secondary infections grafted on the influenzal pulmonary lesions. As was said in the beginning of this paper, influenza seems to possess the power of overwhelming the organism and destroying all resistance to secondary diseases. In this way the pneumococcus and the meningococcus and the streptococcus find ideal conditions to spread down into the lungs through the bronchi and produce the fatal broncho-pneumonias of which we have seen such an appalling manifestation in this recent epidemic.

The pneumonic type of this pandemic which has so recently swept over the world has not been confined to the United States. It was present in France and England, it has been reported from the Malay Peninsula and from Korea, so that the epidemic seems to have remained true to type around the world. In fact, in British India alone, no fewer than 4,899,725 persons, about 2% of the whole population, died of influenza or its complications, the vast majority during the space of two months, a havoc to which the Black Death of 1348 alone offers a parallel. The explanation given is that the races of India have a low resisting power to pneumonic infection. It is further reported that Pfeiffer bacilli and pneumococci were the only pathogenic organisms constantly met with in fatal cases, and the streptococci so often found in England and America were rarely found in India.

Even this pneumonic type of influenza is not new, but has been referred to in other epidemics, and the peculiar sodden lungs seen in those dying early of influenza pneumonia without the secondary pneumococcus type was definitely commented upon and described in the epidemics of pneumonia seen in France in the last part of the 18th century. The lungs were then described as being in a state of "typical hepatisation, or of soft, hemorrhagic infiltration, and the bronchial mucosa congested, or here and there sodden." The typical pneumonia of influenzal infection, killing before a secondary infection is engrafted upon it, shows the lungs to be in a condition of soft and hemorrhagic infiltration and exudation, called by some hemorrhagic pneumonitis. Delafield described it after the epidemic of '89 and '90 that the lungs had a maximum of congestion with a minimum of consolidation. The best explanation for this peculiar condition seems to be that of Ross and Hunt, that it is a vaso-paresis with a destructive type of leukopenia going on so quickly that the myocardium has not had time to become equally affected, and thus the heart is still vigorous enough to pump forcibly the blood into the lungs, the extreme lack of tone in the vessels preventing, however, the left ventricle from draining off the blood from the pulmonary area. Thus is formed a bloody transudate drowning the patient. This would also explain the lack of aeration of the blood and the curious cyanosis which is so noticeable. If this early stage of vaso-paresis is passed, or if it does not go on with sufficient intensity to cause death, the secondary infections of the broncho-pneumonia take place and the toxins then have time to cause the serious myocardial degeneration which is spoken of as so noticeable in the reports from the English army surgeons in France.

It has been a noticeable feature of influenzal infections in the past three epidemics, during the past thirty years, that acute myocardial degeneration, especially in people over sixty years of age—that is, engrafted on some form of the chronic degeneration so often present in people of this age—have been frequent and of serious import. The theories just expressed would explain the success of the vaccination by which pneumococci, streptococci and influenza bacilli, when injected early, seem to call forth a protective reaction against, not only the invading organism, but the possibilities of secondary infection. These inoculations seem to have been successful in an encouraging proportion of cases, and directly in ratio to the early period of the disease in which they were given, and one might also add in ratio to the youth of the patient, for among those who have used them there seems to be a strong feeling that older people do not bear them as well nor do as well under them as those blessed with youth.

Other forms of protective serum are those of the serum of patients having recovered from influenza, which seems to have given distinctly beneficial results, and the regular pneumococcus serum against Type I. Another protective injection used is that of non-specific protein, such as typhoid protein. This last form of injection has impressed Cowie and Bevan as a saving procedure within limitations, but it must be given by intravenous injection in the beginning stages of the pneumonia, and not in any case advanced beyond the third day, and no more than five hundred million dead typhoid bacilli should be given at one injection. These injections are followed by a typical protein paroxysm of a sharp rise in temperature, followed by a decrease in the temperature and a definite improvement in the subjective symptoms. There seems to be a rise in the leukocyte count following these foreign protein injections. There seems to be a higher agglutinin and lycin production, and the opsonin and lycin conditions of human and animal serum appear to be definitely raised after the therapeutic injection of foreign proteins.

In the general treatment of the patient with influenza there seems to be no question that the salicylates and salicin relieve the distressing ache and pain. Ammonium salicylate and ammonium carbonate in 5-grain doses every two hours seem materially to produce this result, and produce a not excessive sweating with the reduction of the temperature. It is in the pneumonic congestions of influenzal type that ergot seems to be of use in reducing the congestions and bring about a better circulatory equilibrium. If not given hypodermically, a mixture of the extract with the extracts of nux vomica and gentian, a half grain each every two hours, often seems to produce a good effect. Now that the profession has gotten over its furore against temperature *per se*, the anti-pyretic coal-tar products do not seem to be as much in vogue as formerly for the treatment of this disease. This is a distinct advantage for the patients, as the depression following their excessive use prolongs the depression of convalescence. The persistent spraying of the nose and pharynx with some form of silver salt or some form of mild disinfectant materially aids in confining the infection, in its early stages, to the upper air passages, and this procedure gives the impression, when tried in a large number of patients, that it prevents, in many cases, the spread downwards into the bronchi, and thus limits the pulmonary complications.

Time does not permit the interesting discussion of the physical signs of these secondary bronchopneumonias of influenzal origin. Extensive bilateral pneumonias frequently occur with absence of physical signs. Whoever thinks that bronchial voice and breathing are necessary for a diagnosis of pneumonia will leave most of his cases unrecognized. Absence of breathing or diminished breathing, with a few rales and slight variations of voice fremitus and whisper, and harshness of the breath sounds must satisfy the most exacting for a realization of extensive pneumonic lesions.

Discussion.

Dr. Leo Loewe, New York City: I wish to offer a new method for typing pneumococci, done at Mount Sinai Hospital. Owing to lack of time, the method will not be given in detail. It consists, essentially, in growing in the laked blood of the patient known Type I, II and III pneumococci—the blood being drawn into a sterile test tube containing potassium oxalate, and then laked by the addition of small amounts of ether.

A positive reaction is indicated by the production of a reddish-brown color, the other tubes remaining clear—the final result being the formation of a clot. The reaction has been noted within two hours—the average time being six to eight hours. By spectroscopic means, it is hoped to materially shorten the time of the reaction.

Studies were made on fifty-two cases of pneumonia. The tests on forty-nine cases are confirmed by agglutination reactions made on organisms isolated from sputum, lung puncture, or both. The forty-nine cases thus corroborated are divided as follows:

Group I	7 cases
Group II	11 cases
Group III	9 cases
Group IV	18 cases
Mixed infections	4 cases

The following mixed infections were disclosed:

Case IV.—Type I and II. Agglutination

tests on organisms isolated from sputum proving to be Type I and II.

Case XV.—Type I and III. Type III organism obtained from sputum; Type I organism from lung puncture.

Case XXIII.—Type I and III. Sputum yielded Type III organism. Lung puncture was unreliable (clumps present in all tubes).

Case XXXIII.—Type I and III. Type I organism obtained from sputum; Type II organism from lung puncture.

It may be inferred that there are some cases of presumable Type I pneumonias in which serum therapy is unavailing, due to such mixed infections.

A result was obtained as early as the second day. There was no opportunity to make studies on the first day of the disease.

In all tests up to the present time, none were found positive after crisis.

Controls, on patients suffering from diseases other than pneumonia, were uniformly negative.

Avery and precipitin tests were done in practically every case. In the majority of cases where we obtained a definite type, the Avery test gave a similar type. However, there were a number of instances where we obtained a definite type confirmed by agglutination reactions in which the Avery could only be read as a Type IV.

The advantages of the method are:

1. Its simplicity.

2. Five to ten cubic centimeters of blood are practically always obtainable, whereas satisfactory sputum is often unavailable especially in early stages of the disease.

3. The reaction, when it occurs, is unmistakable and persists.

4. A reaction with blood is obviously more accurate than one depending on sputum where contact types may be present.

5. Mixed pneumococcus infections can be determined.

Studies will be extended to establish the possibility of specificity in other infections.

Dr. Thomas C. Chalmers, Forest Hills: I had hoped to hear more on the various treatments of this disease; perhaps if there were fewer papers and more time for the discussion we would get more scientific data from the meeting.

On my service at Queensboro Hospital in the early epidemic, I divided the cases of influenza and complications into five different groups of ten each and treated them as follows: Group No. 1 with straight influenza vaccine from the Department of Health. Group No. 2 with mixed influenza vaccine. Group No. 3 with the salicylates. Group No. 4 with the intravenous injection of sodium iodide and salicylate. Group No. 5 symptomatic treatment plus quinine.

In this series there was practically no difference in result, but I do not consider this very reliable as most of the cases that we received at Queensboro had been ill and treated at home for from three to ten days. I did, however, note that those that gave a history of having been treated with a coal tar preparation were much more cyanosed than those not so treated and I discarded this treatment early in the epidemic.

At first I seemed to get slightly better results in private practice from the use of the combined influenza stock vaccine and used this in the majority of my cases. Later I had my assistant, Dr. Harold E. Smith, of Kew Gardens, then a Lieutenant in the Medical Corps, U. S. A., on duty as chief assistant to the chief of laboratory at Base Hospital, Camp Mills, take cultures of the naso-pharynx and sputum on blood agar plates. After fifteen hours' incubation the colonies were examined, subcultures made, and the bulk of the growth used directly to make an autogenous vaccine. Provisional diagnosis was made and later confirmed by subcultures. In this way the vaccine was prepared in about twenty-four hours. The influenza bacillus was found in a majority of these cases plus the hemolytic streptococcus, streptococcus viridans, or pneumococcus. All four types of the latter were found, only one case showing Type No. 1, which was treated with the autogenous vaccine plus the serum, and recovered.

I will mention only two cases in my private practice illustrating the striking results from the use of the autogenous vaccine. Case No. 1, a man 35 years old, taken ill on the sleeper when returning from a business trip, when first seen by me had a mouth temperature of 101.5 and pulse of 140 and respirations 32, excessive headache, excessive prostration, and a very highly congested pharynx. I immediately gave him 1 c.c. of the mixed influenza stock vaccine (B. influenza, M. catarrhalis, staphylococcus, streptococcus, pneumococcus and Friedländer bacillus) plus the calomel series. At this time Dr. Smith made a culture of his naso-pharynx which showed a very heavy growth of the influenza bacillus and the hemolytic streptococcus. During the next twenty-four hours the patient became progressively worse with a large amount of bloody sputum, and appeared in extremis. I administered 200 million of the autogenous vaccine as an initial dose. My usual initial adult dose was 100 million. This was given twenty-six hours after the culture was taken and in ten hours there was a marked improvement in the symptoms, the temperature falling from 105.5 to 101.2 and there was a marked diminution in the amount of blood in the sputum. I gave 400 million of this vaccine twenty-four hours after the initial dose, after which the temperature rose to 102 and then gradually fell to normal in twenty-four hours. The case went to complete recovery and was discharged on the eighth day.

Case No. 2, four days later, showed marked congestion of the pharynx with a large amount of pain, especially in the throat, dry hacking cough, temperature 102, pulse 120, respirations 36. I gave 1 c.c. of the same mixed influenza stock vaccine, getting quite marked reaction but no improvement in symptoms. That evening, eight hours after the stock vaccine was given, Dr. Smith took a culture which showed the influenza bacillus and the streptococcus viridans. The next evening I administered 100 million of the autogenous vaccine, at which time the patient's symptoms were generally more aggravated than when the stock vaccine was given. The next morning there was a general improvement in symptoms and I gave 200 million of the autogenous vaccine and two days later 400 of the same; although the temperature had been normal for twenty-four hours at this time, the throat and cough had not entirely cleared up. The case had an uneventful recovery.

I made it an absolute rule to keep all my cases in bed for four days after the morning and afternoon temperature had become normal. Also I have learned from this epidemic that all cases of sore throat should be cultured and if they show B. influenzæ, hemolytic streptococcus or viridans in large numbers, an autogenous vaccine should be made and used as a routine. This treatment gives excellent results, warding off heart complications and arthritis.

I conclude from these and other cases, with more or less similar results, that the use of an autogenous vaccine made either from cultures taken from the naso-pharynx or sputum, or both when possible, is the most successful treatment of influenza and its complications. I have used this treatment in over 100 cases and have had complicating pneumonias in eleven of that number with no death, whereas in the early part of the epidemic where I used the other treatment, including the stock vaccines, my results were by no means so favorable.

The injection of foreign protein seems to increase the resistance and will increase the leucocyte count. This probably explains the improvement from the use of stock vaccines in some cases, especially if the stock vaccine contains the particular strain of organism causing the disease. The intravenous use of salicylates and iodides probably causes improvement for the same reason. As there are innumerable different strains of organisms which are grouped under one name, the greater value of the autogenous over the stock vaccine is explained.

Success in making autogenous vaccines from these cases depends on the way the culture is taken, the character of the culture media, and the interpretation of the growth. In several parts of the country bacteriologists have failed to recover the influenza bacillus from these cases, and we feel that this is due to technique rather than to a different bacteriological picture. We feel that the most important factor in the recovery of these organisms is the character of the culture media. At Camp Mills where large numbers of troops were arriving from all parts of the country, this organism was recovered in over 75 per cent of cases.

Dr. Fenton B. Turck, New York: Dr. Lambert had brought out the point that there was very little evidence of infection in the extensive pneumonic infection. In experimental animals it was found that there was congestion of the lungs, that it was in the lungs that the first reaction took place. The transmission in these cases had been found to be due to hand transmission, rather than to coughing and spraying.

By exact experiments on animals in our laboratory we found that the application of autolyzed lung tissue of cats to cats' paws caused pneumonia and death. Normal cats placed in the same cage without the application of the cat lung paste on their paws also contracted pneumonia and died. This is specific, as autolyzed lung paste from other animals applied to their paws did not produce pneumonia.

AURAL COMPLICATIONS OF THE RECENT INFLUENZA EPIDEMIC.*

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In any general epidemic it is almost impossible to obtain reliable statistics regarding the involvement of special organs. The increased amount of work suddenly thrown upon the medical profession by such circumstances renders the observation of symptoms referable to organs of special sense almost impossible. The observers themselves are hampered on account of the large number of cases brought before them, and moreover are in many cases absolutely incompetent to determine the involvement of special organs. Moreover, the increased amount of work makes it difficult to obtain special advice in these cases. They must, therefore, depend very largely upon themselves, and it is not strange that in many instances errors creep in. This perhaps is particularly true of aural involvement in any general constitutional infection, such as influenza, which so frequently manifests itself chiefly by symptoms referable to the upper air tract. If the conditions were reversed, for instance, and the otologist in a given epidemic were to give statistics as to his idea of pulmonary involvement, there could be no question but that a great factor of error would be introduced. It is for these reasons, therefore, that such varying reports are given regarding the involvement of the middle ear and mastoid in the epidemic of influenza, through which we have so recently passed.

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The purpose of the present paper is simply to report briefly the conditions met with at St. Luke's Hospital, New York City, for the period from September 28, 1918, to March 31, 1919, this period embracing the time during which the epidemic was most pronounced in New York City. The epidemic in this city was so severe that three special wards were opened for influenza cases at St. Luke's Hospital. During this period 882 cases of influenza and influenza-pneumonia were admitted to St. Luke's Hospital. During the period from September 1, 1918, to March 31, 1919, twenty-four cases of mastoiditis were operated on in the entire hospital, or 2.7 per cent of the cases of influenza admitted to the hospital demanded the mastoid operation. It will be noted that the mastoiditis record comprises a period of nearly one month before the influenza epidemic. Further search of the hospital records shows that the number of cases of otitis media complicating influenza was sixteen and of these in six cases the mastoid operation was necessary, or a little over 1.8 per cent of the influenza cases were complicated by middle ear infection sufficiently severe to require operative interference, either simple myringotomy or mastoidectomy. It is quite possible in the compilation of the hospital records that more than six cases of mastoid operation were necessary. Even if we consider that in the sixteen cases complicating influenza the mastoid operation was necessary in all, the percentage is only 1.8, while if we take the entire twenty-four cases of mastoiditis, the percentage would be only 2.7. It is also interesting to note that during the period from September 1, 1917, to March 31, 1918, a period similar to that of the following year, thirty-four mastoid operations were performed. In other words, in the year preceding the epidemic the number of operations for mastoiditis in this hospital exceeded by ten the number of operations performed during the period of the epidemic. The statistics in each instance apply to the entire hospital and not to special ear wards.

It is extremely important that aural symptoms should be recognized early in cases of influenza. We have two general symptoms indicating aural inflammation, namely, temperature in infants and pain and temperature in adults and older children. These are the two general symptoms for which the general clinician should be on the alert. There is one danger to which I am afraid these patients are subjected in any epidemic, and that is to the rather too great tendency on the part of the general clinician to attribute a rise in temperature to an aural lesion without having the aural lesion adequately confirmed by sufficient physical signs. I have been astonished to hear some men of very wide pediatric experience tell me of the number of cases in which they have performed myringotomy during the present epidemic. These gentlemen were all of high professional standing and were perfectly sincere in their purposes. It has been my good fortune to see in some instances cases of aural complication in private practice with these gentlemen. Unfortunately, they have been inclined to attribute too much importance to slight physical changes in the ear, that is, a slight congestion of the tympanic membrane associated with a rise in temperature has in their minds always demanded an immediate myringotomy. In some of these cases myringotomy has been delayed, and we have found that the rise in temperature was not due to a middle ear inflammation, although there was a mild middle ear inflammation present in these cases, but to a pulmonary lesion which early in the disease could not be made out by physical examination, but which became perfectly evident later. The ear actually inflamed and demanding myringotomy presents such unquestionable evidence of a severe inflammation that an error cannot well be made as to the necessity of the procedure. We must remember, however, that in any general disease affecting the upper air tract a mild otitis media with slight congestion of the drum membrane is not unusual. It is just these mild cases which are misleading and which must be watched carefully, and myringotomy must be performed when it is actually indicated. It must be remembered, however, that many of these mild cases will resolve spontaneously if myringotomy is not done. I admit that in a doubtful case it is wise to incise the drum membrane so as not to allow the inflammatory process to progress unchecked. There is one great danger, however, if every case is incised, and that is the result of the traumatism upon the tympanic tissue. All of us who have devoted ourselves to special practice know that many cases of so-called tubo-tympanitis, that is, where we have obstruction of the Eustachian tube with a slight effusion of fluid into the tympanic cavity and slight congestion of the drum membrane, resolve spontaneously. The intensity of the infection is evidenced in children by temperature elevation. This temperature elevation almost invariably agrees with the physical signs present, that is, if we have a severe infection of the middle ear as evidenced by a very red and bulging drum membrane, the temperature will be high. This is systemic infection. On the other hand if we have slight congestion of the drum membrane, although there may be considerable fluid in the tympanic cavity and a high temperature, it is better to delay myringotomy and to search thoroughly in the chest for some cause of the temperature, rather than to incise the drum membrane when the physical examination seems to show only a mild inflammation. That myringotomy is a comparatively harmless operation I am willing to admit, but the moment that the drum membrane is opened the middle ear is open to infection from without and I am certain that I have seen cases where suppuration of the middle ear has extended over a number of weeks following myringotomy in which the middle ear congestion might have resolved without any operative interference. While, therefore, I am heartily in favor of early myringotomy where it is necessary, I am absolutely opposed to it where the signs upon speculum examination are not sufficient to demand this procedure. In the adult and in older children the symptom of pain is an excellent guide. Of course, in infants we have not this symptom, and our judgment must be based upon the physical appearance of the drum membrane and the temperature.

Too much emphasis cannot be laid upon the severity of the middle ear inflammation. If this is mild in character, it is a great deal better to allow the inflammation to subside with an intact drum membrane rather than to incise every case and establish tympanic drainage. My impression is that many of these mild cases during the epidemic were incised unnecessarily. This would be a natural error during the stress of work thrown upon the general medical man during the epidemic. This is not intended as a criticism, but simply as a suggestion. The nature of the micro-organism causing the infection is interesting. My impression is that we had one case in which the influenza organism was the cause of the middle ear inflammation, but even in this case I am in doubt. Most of the infections were, I believe, due to pneumococcus or streptococcus. Occasionally streptococcus capsulatus mucosus, which really is pneumococcus, group 3, was the cause of the infection. In one of these cases the disease ran its characteristic course, causing but few symptoms, considerable destruction in the mastoid, followed by a meningitis.

The character of the mastoid involvement in this epidemic has according to my experience been rarely of the hemorrhagic type. So far as I remember I have operated on no case of the hemorrhagic type during the epidemic, although I have seen at least one case in consultation. In most of the cases the mastoid was infiltrated throughout, considerable granulation tissue being present, and in some cases free pus. The hemorrhagic type of mastoiditis is characterized by excruciating pain which accompanies the acute inflammation of the middle ear, and this is practically unrelieved by incision of the drum membrane, making an early mastoid operation imperative. This type of inflammation has not been the rule in the present epidemic as far as my own cases are concerned. I know that here my experience differs considerably from that of other writers, but I can only speak from the number of cases which came under my own observation and which were observed with a good deal of care. It is interesting to note that of the 882 patients under observation at St. Luke's Hospital, 254 suffered from pneumonia. Pneumonia was particularly prevalent among children, and ten mastoid operations were performed on children under eight years of age. A number of these were not influenza cases. The pneumonia was usually of the bronchial type although some of the adults suffered from the lobar type. It was difficult in some cases to determine whether the temperature was due to the condition in the chest or due to the condition in the ear. In many the condition in the chest was so severe as to preclude the possibility of performing the mastoid operation upon these cases on account of the danger of general anæsthesia. Some of the cases which I might have operated upon earlier were not operated upon as early as I might otherwise have done, and some of these cases recovered without the mastoid operation. The necessity of prompt operation in all acute otitis cases should be strongly emphasized where the local signs demand this procedure. It is gratifying to note, however, that but a single case terminated fatally as the result of the middle ear involvement, and this patient came under observation nine weeks after the acute otitis. This case is not included in the St. Luke's statistics and will be spoken of later.

Broadly speaking, therefore, I would say that mastoid and middle ear involvement in this present epidemic was no greater than we would expect with any disease involving the upper air tract. In fact, the operative records at St. Luke's Hospital show that during the same period of the preceding year, we had more operations for mastoiditis than during the period of the epidemic. The management of a case of influenza otitis or otitis complicating a pneumonia so far as my observation is concerned differs in no way from the management of a middle ear or mastoid inflammation occurring at any other time. The plan of treatment to be followed in each case must depend exactly upon the same procedures which govern us during a non-epidemic period. The local canal signs, the mastoid tenderness, the nature of the infection, the temperature, the pain, and the corroborative evidence furnished by Roentgengrams furnish exactly the same information in cases of influenza otitis as they furnish in cases of middle ear inflammation occurring during a non-epidemic period. I believe that the public has been unduly alarmed by the opinion which has apparently been given out that in the present influenza epidemic there has been a great preponderance of cases with aural involvement. I believe that it is the duty of the medical man not to excite the public unduly in periods of an epidemic, and certainly from my own observation, not only at St. Luke's Hospital from which I have given detailed statistics, but at other hospitals I am glad to state that the aural involvement following influenza has not been more severe during the epidemic than it has been at any other time.

As illustrating the importance of prompt operation, I might state a case which has occurred recently in which the patient was seen nine weeks after the inception of an influenza otitis. At that time there were all the characteristic symptoms of mastoid involvement, and a smear from the ear showed that the infection was due to a streptococcus capsulatus mucosus, or pneumococcus, group three. An immediate operation was performed, the mastoid was broken down throughout, a cortical perforation existing at the root of the zygoma. The sinus had been exposed by disease, but appeared perfectly normal. The dura was not exposed either by disease or operation and the vitreous plate covering the floor of the middle cranial fossa was bright and glistening. The wound was partially closed, bearing in mind that the infection was virulent. This patient made a very rapid convalescence, leaving the hospital one week after her operation. At the end of the second week there was simply a small sinus leading toward the mastoid antrum. On the sixteenth day after the operation the patient had headache, pain in the back of the neck and in the back, and a temperature of 102. Spinal puncture on the following day showed a cloudy spinal fluid with about 600 cells and a streptococcus capsulatus mucocus in the spinal fluid. In other words we had here a case of late meningitis, developing in spite of the drainage of the primary focus. Had the patient come under observation earlier, and had early operation been performed, this sequel would probably not have occurred.

In closing I wish to say that probably this epidemic has done a great deal of good, at least in one direction. From the fact that the general practitioner has been on the alert in most cases for complicating aural lesions, it has probably emphasized for him the necessity of examining the ear in all cases where the constitutional infection involves the upper air tract, making aural complications at least probable. Those of us who are doing special work are in hopes that it will also impress on him the necessity of early interference or at least of early advice in every case where the ear is involved, and that he will learn from this epidemic that involvement of the middle ear is always a dangerous symptom. If he could come to learn that an aural suppuration lasting not only for a few days as in the acute cases, but for years as in cases of chronic middle ear suppuration without any marked symptoms, always constitutes a menace to life, he would do much not only to advance general medicine but also to advance the science of otology.

Discussion.

Dr. James F. McCaw, Watertown: Nearly all of the cases of otitis media seen by me during the recent epidemic went on to convalescence without radical interference, as they were most of them of the hemorrhagic type. It has been my experience that this type usually occurred at the height of the epidemic and was less virulent than the infections coming on during convalescence. One case seen during convalescence with a most virulent infection of the mastoid and widespread destruction of same, also showed infection of the kidney as evidenced by pus blood and renal epithelium and hyaline casts in the urine. After mastoidectomy the renal involvement gradually cleared and the patient went on to complete convalescence.

THE METEORO-TELLURIC PHYSICO-BIOCHEMICS OF CORYZA, ASTHMA AND INFLUENZA.*

By GEORGE N. JACK, M.D.,

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As Mark Twain has wittily remarked, "There is a lot said about the weather, but nothing is ever done about it."

Life is composed of three parts, biochemistry or inherited vitality, food and weather.

Biochemistry or inherited vitality has been studied, tracing such diseases as acromegaly, thyroidism, cretinism, myxoedema and Addison's disease to a disturbed biochemistry due to an abnormal action of either the pituitary body, the thyroid or the adrenal glands.

Food metabolism has been investigated from auto-intoxication, ptomaine poisoning, scurvy, sugar diabetes and typhoid fever, to idiosyncrasies and anaphylaxis; while as to the weather side of life, humidity, drouth, heat, cold, atmospheric stasis, cyclones, winds, density or rarety, high or low pressure, sunshine or clouds, rain or snow, with its gas metabolism, as Mark Twain says, nothing has ever been done about it.

Today our weather bureaus, with their thermometers, barometers and methods of calculating absolute and relative humidity, rainfall, snowfall, wind velocity and their system of recording and reporting the same, together with their observations as to sunshine or clouds, length of day and night, etc., furnish us with records of the prevailing weather conditions.

The records of health boards, with their vital statistics, furnish us information regarding the sickness of a community.

By considering, therefore, the connection between the weather bureau and the board of health records, the relationship between meteoro-telluric phenomena or the weather and health has become a positive science.

During the last twenty-three years, in conjunction with a general practice, I have made a study of 1,052 cases of asthma and summer autumnal coryza, and during the last five years I have made notes twice a day, at 7 A. M. and 2 P. M., on the weather, together with observations as to its effect on these subjects and also upon the general health of the community.

I have classified the weather temperature into favorable and unfavorable.

Favorable—

(a) Ten degrees to 34 degrees when the ground is frozen, thus preventing the formation of toxic blood disintegrating ground gases.

(b) Thirty-four degrees to 60 degrees during clear, sunshiny, dry, windy periods, when the ground is covered with green and growing vegetation that is absorbing the toxic blood disintegrating ground gases.

(c) Sixty degrees to 86 degrees with sunshine, clear sky, good breeze and a relative humidity of 70 per cent.

Unfavorable—

(a) Below zero to 10 degrees above. When the temperature gets below 10 degrees above zero, the frosty air during exertion out of doors irritates and congests the mucous membranes, which narrows their caliber sufficiently to produce a dyspnoea which, if continued for over one hour's time, frequently results in poor oxygenation and an automatic blood disintegration which terminates in a genuine attack of asthma.

(b) Thirty-four degrees to 60 degrees during blood disintegrating, humid, cloudy, windless atmospheric stasis, foggy, smoky periods when the ground is covered with dead and dying decomposing vegetable and animal matter that is eliminating toxic gases, as in the autumn.

(c) Above 86 degrees. A temperature above 86 degrees reduces the viscosity of the blood, dilates the capillaries, thus favoring a heat retention and diminished alkalinity that result in a blood disintegration that in turn results in a high viscosity, rapid coagulation, and an oozing, osmosis, transudation or a dumping of waste products along the line of least resistance, which in the coryza and asthmatic subjects is the mucous membrane of the head and air tubes.

From my study of asthma I have come to the following conclusions:

I. The cause of asthma and summer autumnal coryza is an unstable blood.

II. Owing to the unstability of the blood of the asthmatic and summer autumnal coryza subjects, it is rendered hyper-susceptible and sensitized to numerous metabolic, gas, weather and food conditions.

III. I consider the blood as the biochemical medium between the weather on the lung skin side and the food on the gastro-intestinal side.

IV. The hypersusceptible and sensitized blood of the asthmatic and the summer autumnal coryza subject is sufficiently disintegrated to produce attacks (1) automatically, (2) by unfavorable food conditions, (3) by unfavorable weather conditions, (4) by toxic gas conditions, and (5) by a combination of all of the above conditions. These have occurred in about the following ratio:

(a) In about one fifth of all my asthmatics their unstable blood has been automatically, biochemically, metabolically, glandularly or functionally periodically disintegrated sufficiently to produce an attack of asthma.

(b) In one fifth of all asthmatics their unstable blood is sufficiently disintegrated by unfavorable food conditions to produce attacks of asthma.

(c) In about one fifth of all my asthmatics and all summer autumnal coryza subjects their unstable blood has been sufficiently disintegrated by unfavorable weather conditions to produce attacks of coryza and asthma.

(d) In one fifth of all asthmatics their unstable blood is sufficiently disintegrated by toxic gas conditions to produce attacks of asthma, as swamp gas, animal excreta gas, gas from decomposing vegetation, night ground gas, burning sulphur gas, etc.

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* Read before the Buffalo Medical and Surgical League, at Buffalo, January 9, 1919.

(e) In one fifth of all asthmatics their unstable blood is sufficiently disintegrated to produce attacks of asthma by a combination of two or more of the above mentioned automatic, food, weather and gas blood disintegrating agents.

V. The unstable blood of the asthmatic runs low in certain minerals or chemicals that must be supplied in the form of medicines until it can draw the same from a prescribed diet that is rich in the minus minerals or chemicals.

VI. The treatment of asthma could be likened to the unlocking of a combination lock; one may know all the combinations but one and yet he will not be able to unlock the lock until he determines the missing combination.

The seasons of the year in our climate that are most favorable for the unstable blood of the asthmatic, or that possesses more weather blood stabilizing agents, are the spring summer solstice quadrant which extends approximately from May 5th to Aug. 11th, and the autumn winter solstice quadrant which extends approximately from Nov. 6th to Feb. 4th.

The seasons of the year that are the most unfavorable for the unstable blood of the asthmatic and the summer autumnal coryza victim, or that possess more weather blood disintegrating agents are the summer autumnal equinoctial quadrant which extends approximately from Aug. 11th to Nov. 6th, and the winter spring equinoctial quadrant which extends approximately from Feb. 4th to May 5th.—Jack, The Loppered Milk Diet, *Buffalo Med. Jour.*, Dec., 1917-Jan., 1918.

Hot weather coryza and asthma manifest themselves as follows:

(1) The heat dilates the peripheral and mucous membrane capillaries, causing them to become congested with a lymph and blood stasis. This draws blood from the kidneys, diminishing the urine output, which causes an accumulation of urea and other toxines that should be eliminated by the kidneys in the blood which generally produce a scant high-colored urine loaded with indican, thus accounting for the increased output of indican in hot weather.

(2) Heat reduces the viscosity of the blood, lengthens its coagulation time and thins its consistency, thus causing the blood to drop rapidly from a punctured ear in large drops that quickly penetrate the test paper. The hydrogen peroxide reaction of the blood at this stage, if of the anaemic variety, is slow and white, and if of the toxic leucocytic variety is rapid and brown.

If the blood disintegrates in hot weather, as most unstable bloods do, its character becomes the same as after disintegration in cold weather, that is, its viscosity becomes high, coagulation rapid, and it flows in small coal-black drops of a thick consistency that are very slow to penetrate the test paper. The hydrogen peroxide reaction, if from toxic leucocytic blood, becomes rapid with a dirty brown color, while from anaemic blood it is slow with a dirty white color.

(3) The processes through which the blood disintegrates most frequently in hot weather to cause coryza and asthma are as follows:

(a) Hot weather reduces the viscosity of the blood, slows its coagulation and thins its consistency.

(b) Hot weather dilates the peripheral and mucous membrane capillaries which permits the accumulation of the lymph and blood, which lymph and blood capillary congestion and stasis process is favored by the fact that the hot weather has already reduced their viscosity and consistency.

(c) This hot weather physico-biochemical effect is manifested first, by swollen fingers, feet, eyelids and congested and irritated mucous membranes, constipation and a diminished urinary output.

2d. The diminished elimination of the blood's end products of metabolism resulting from the capillary hot weather dilatation congestion and stasis soon results in the automatic disintegration of the blood. If the blood is not automatically disintegrated at this stage, it has its resistance so weakened that it is easily disintegrated by toxic blood disintegrating ground gases that are always prevalent during hot windless weather.

3d. The unstable blood of many coryza and asthma subjects is so sensitized to the above mentioned weather conditions that a twenty-four hour, or day and night exposure, is all the time that is required to precipitate an attack. In fact, many asthmatics are so sensitized to these weather conditions that they have asthma at this time of the year and no other.

4th. After the blood disintegrates, no matter whether the disintegration is automatic or due to toxic ground gases, foods or injected serums, or to a combination of the above causes, it presents the same characteristic appearance.

Thus the toxic leucocytic blood, after it has disintegrated, and just before and during an attack, generally flows in small, slow forming black drops, with a high viscosity, a rapid coagulation and a thick consistency. The black drop with its diminished vitality slowly enters the test paper and shows a high hemoglobin scale. If a few drops of hydrogen peroxide be added to a fresh drop of this toxic blood on a cover glass, it generally gives a rapid dirty brown reaction, while that of normal blood is pink. The leucocytes are increased and show an amyloid degeneration. The eosinophile cells are increased. Often 20 per cent. to 50 per cent. of the erythrocytes are star shaped or irregular, showing a granular disintegration. The rouleaux formation is generally absent. It as a rule requires an extraordinary amount of pressure on the cover glass to differentiate the cells of this toxic blood, as they tend to form in an opaque, shapeless adherent mass.

The urine from unstable blooded subjects during intervals between attacks is generally profuse, pale, with a light specific gravity, neutral or slightly acid in reaction and often containing phosphates.

After the blood disintegrates, the urine becomes scant, high colored, often a bloody brown, with a high specific gravity, an acidosis and frequently loaded with indican, urates and other waste substances eliminated by the disintegrated blood.

5th. The lymph and blood collected in the dilated and congested peripheral capillaries soon after the blood disintegrates begin to eliminate their waste products through the capillary wall into the peripheral tissues and mucous membranes in a kidney-like effort to maintain the vitality of the blood.

6th. The accumulation of the end products of metabolism as urea and dead leucocytes in the peripheral tissues and mucous membranes soon results in an oozing through, transudation or outflow of serum and mucus.

7th. After the process of blood disintegration, capillary congestion, dilatation and skin or mucous membrane elimination and lymph, serum, mucus oozing, with their characteristic itching, burning, smarting, sneezing, wheezing, profuse, watery eye and nose running is established, it generally continues with exacerbations unless properly treated, until cool, windy, freezing weather sets in, or the proverbial first frost.

8th. The physico biochemics of the cold, frosty, windy weather cure of the hot weather coryza, asthma and eczema, or heat physico-biochemical hemolytic crises, is simply the reverse of the weather condition that caused them, i. e., the frosty air freezes up the humidity and the earth does away with the heat that caused the formation of the ground gases; the winds also blow away what toxic ground gases may form; the cold, stimulating, frosty air tightens up the skin and mucous membrane capillaries, relieving their congestion and adding new vitality to the circulation, driving the blood back to the kidneys with an abundant output of urine.

9th. The city is better for the unstable blooded coryza or asthma subject than the country, owing to the fact that our modern cities have less blood disintegrating ground gases than the country.

10th. The immediate disintegration of the blood, while it is seeking the line of least resistance for a dumping ground for its dead and useless material, is followed by an induration of the skin, or peripheral and mucous membrane capillaries, as observed by swollen fingers, water bags under the eyes, red and congested mucous membranes, sneezing, itching, burning, dryness of the throat, dry skin, flatulency and constipation.

The induration stage is followed in a few hours by the blood's dumping its waste products through an oozing of lymph, serum, dead leucocytes and mucus, producing either eczema, diarrhoea and vomiting, cholera morbus, cholera infantum, coryza or asthma, according to the line of least resistance.

After the blood disintegrates by heat retention, if the waste products are not soon dumped, producing either a coryza, asthma, eczema, vomiting or diarrhoea, the victim generally becomes sun-struck.

11th. After the blood disintegrates and during the skin, peripheral and mucous membrane capillary induration stage, the dumping field for the blood's dead and waste material may be selected or induced by treatment. Thus if the inherited, acquired or established blood dumping ground line of least resistance be the mucous membranes of the head and air tubes, producing coryza and asthma, it may be transferred to the mucous membrane of the gastro-intestinal tract by administering emetics and purgatives, thus inducing diarrhoea and vomiting.

12th. The beneficial climatic response or relief of the hot weather coryza and asthma subjects following frosty, cool, windy weather or a cool, windy, rocky location, offers another convincing proof of the hot weather ground gas etiology as above described.

13th. The chilly, humid, dewy, foggy, windless summer autumnal nights, until they are cold enough to freeze, 32 degrees or below, which freezes up the humidity and the earth's surface, thus lessening the formation of toxic blood disintegrating ground gases, increase the summer autumnal coryza and asthma subject's trouble by adding a chilly blood disintegrating humidity. This night atmosphere acts as a blanket to hold close to the earth's surface the gases formed during the hot day, which furnish a double blood disintegrating action, a chilly humidity and toxic gases, thus constituting a horror for all summer autumnal coryza subjects and asthmatics.

14th. The unstable blood of many asthmatics is so sensitized to night ground gases which together from a lack of the beneficial chemical action of sunshine on the blood sufficiently disintegrates their blood so that attacks are produced night after night, which disappear with the warm morning sunshine, so that they are quite free from asthma during the day.

Ever since the beginning of the world war we have had abnormal or unseasonable weather conditions, due no doubt to atmospheric vibrations caused by artillery explosions.

The prevailing weather conditions during the summer and autumn of 1915 and 1917 were so cold, windy and cloudy that there were but comparatively few cases of summer autumnal coryza and asthma. The winds blew away the humidity and toxic ground gases and the rains also tended to wash the toxic gases from the air; and we had but few hot, humid days to dilate the capillaries.

During the September equinoctial season of 1918 we did not have the usual extreme or blood-heat in western New York, the temperature averaging about 78 degrees, rising on only a few days to 86 degrees. We did not have the extreme heat characteristic of this season and necessary to develop the usual epidemic of summer autumnal coryza and asthma.

The summer autumnal equinoctial coryza and asthma season becomes epidemic when we have blood-heat days or a day temperature above 86 degrees, followed by chilly, dewy, foggy nights with a temperature below 60 degrees as above described.

On Sept. 3d we began having cool, cloudy, humid, rainy blood disintegrating weather, and every day from that date to the writing of this paper, Jan. 8, 1919, we have not had one whole twenty-four hour day without from one to three of the three temperate blood disintegrating weather conditions prevailing.

The influenza became epidemic about that date and is still epidemic. On Sept. 5th the midday temperature dropped to 56 degrees, and from that date on to the present date the prevailing weather conditions have been that of (1) a temperature ranging between 34 degrees and 60 degrees, or a chilly, humid, blood disintegrating temperature; (2) a prevailing windless, atmospheric stasis that permitted the accumulation of toxic blood disintegrating ground gases; (3) a cloudy, smoky atmosphere that diminished the beneficial action of sunlight upon the blood, thus favoring its disintegration.

As a result of the prolonged prevalence of these three blood disintegrating weather conditions, blood disintegrations were very common but owing to the absence of a blood-heat temperature to develop coryza, or a freezing temperature to develop asthmatic dyspnoea, there developed a different line of symptoms.

After the blood disintegrated in influenza there was characteristically a pronounced chill. The disintegrated influenza blood went through the same three stages that it ordinarily does after disintegration in the toxic leucocytic variety of asthma, but the stages were more pronounced and followed each other in more rapid succession and were always accompanied by a febrile reaction.

1st Stage—Immediately after the blood disintegrates, it endeavors to separate itself from the disintegrated lymph, serum and blood cells by depositing the disintegrated material in the peripheral capillaries of the skin and mucous membrane, causing their congestion, stasis or induration, producing a tendency to hemorrhages and constipation.

The peripheral blood at this stage flows in large, rapidly forming drops, with a low viscosity, a slow coagulation, thin consistency and a low cellular count. The liver and spleen become congested. The kidney, the faithful guardian of the blood, is the first organ to begin to correct matters, by the outpouring of a profuse, pale urine.

2nd Stage—A normal kidney soon eliminates the disintegrated watery material from the blood, after which the urine becomes scant, bloody-brown, highly acid, with a high specific gravity and loaded with indican, also often showing phosphates, albumen and bile pigment. A light, profuse urine, followed in a few hours by a scant bloody-brown urine, loaded with indican, is pathognomonic of a disintegrated blood.

The peripheral blood at this stage flows in small black, slowly forming drops, with a high viscosity, a rapid coagulation, a thick consistency and a high leucocyte count.

3rd Stage (the anaemic stage) — In the anaemic stage the blood flows in small, slowly forming, thin, watery drops, with a low viscosity, slow coagulation and a low cellular count.

The blood penetrates the test paper rapidly, like red ink, with a low hemoglobin scale. The hydrogen peroxide reaction is white. The rouleaux formation of the scant red cells is generally distinct and marked, often forming island-like groups.

In haemophilic, plethoric or hydraemic blood, the first stage is more pronounced and the second stage less pronounced than in normal blood.

The blood disintegrations resulting in influenza were more severe and complete than those resulting in ordinary summer autumnal coryza and asthma.

The temperature during the influenza epidemic was not at blood-heat, or sufficiently high to produce the heat retention of end metabolic products, the capillary dilatation and blood disintegration resulting in the ordinary summer autumnal coryza and asthma.

During the influenza epidemic the prevailing temperature ranged between 30 degrees and 60 degrees, which, after the blood disintegrated, tended to leave as the line of least resistance for the dumping of the disintegrated blood's waste products and disintegrated lymph and serum with their diminished alkalinity, the lung tissue, peritoneum and cerebro-spinal membranes.

The peculiarity of the individual often determined the line of least resistance. Thus the line of least resistance in the summer autumnal coryza subjects was the mucous membranes of the head, resulting in coryza as their chief symptom, while in asthmatic and bronchitic subjects the mucous membranes of the head and air tubes were the line of least resistance.

During the induration period of these subjects, they had a painful laryngitis which rapidly extended to the trachea and bronchi with their usual attack of asthma and bronchitis.

The influenza air tube blood dumping produced more soreness and less obstructive dyspnoea than the ordinary asthmatic blood disintegrations.

When the influenza disintegrated blood dumped its waste products into (a) lung tissue, it produced pneumonia-like symptoms; (b) peritoneum, it produced symptoms of peritonitis and appendicitis; (c) into the cerebro-spinal membranes, symptoms of cerebro-spinal meningitis; (d) into the mucous membranes of the head, symptoms of summer autumnal coryza; (e) into the mucous membranes of the air tubes, symptoms of asthma and bronchitis; (f) into the skin, symptoms of urticaria or purpura haemorrhagica.

When the blood lymph serum dumping takes place in the mucous membranes, hemorrhage is often the result.

In people recovering from blood disintegrations there is always more or less anaemia. The post-influenza anaemias in some cases were very marked, indicating the severity of the blood disintegration.

The manner in which the influenza epidemic raged when all three of the above mentioned temperate blood disintegrating weather conditions prevailed was very evident; also how it abated when one or two of the conditions vanished, how it subsided when all three were driven out by freezing, windy, sunshiny weather conditions, to become epidemic again at the return of the three unfavorable conditions, so strikingly demonstrated the relationship between the weather and influenza that it was observed and remarked about by everyone.

A prominent undertaker informed me that the blood in those dying within a few days after contracting influenza differed from the blood of people dying from other diseases; the body after death turned black very rapidly and the capillaries were distended with a dark serum-like substance, while the blood in the large and deep blood vessels was so thick and coagulated that it was drawn off with great difficulty. Eckels in *The Embalmer's Bulletin* remarks that not only clots but great slugs of blood are formed in the vena cava and the larger blood vessels.

Keeton and Cushman state that "influenza has a high (46.6) percentage of leukopenia in the early stages. With improvement, 24.3 per cent of the counts were raised into a leucocytosis. During the whole period more than half (62.2) per cent maintained a leukocytosis. The ranges of this leukocytosis lay between 9,000 and 15,000. Such an increase in the white count must be regarded as a favorable sign."—R. W. Keeton, M.D., and A. B. Cushman, M.D., *Jour. A.M.A.*, Dec. 14, 1918.

Erskine and Knight state that the coagulability of the blood in influenza is lessened, stating that "we have no theory to account for the increased coagulation time of influenzal blood. Possibly the presence of streptococcus hemolyticus may be responsible; but as the lessened coagulability appears early while the red cell count remains nearly normal, it would seem that the first change is in the serum rather than in the corpuscles."—A. W. Erskine, M.D., and B. L. Knight, M.D., *Jour. A.M.A.*, Nov. 30, 1918.

The coagulability of the blood is certainly lessened in influenza immediately after the chill, but it seems to me that the coagulability is increased during the febrile reaction stage.

The two great scientific problems solved by the influenzal epidemic that raged during the summer autumnal equinoctial season of 1918 are, as it appears to me, (1) that the influenza was due to a blood disintegration and (2) that the blood was disintegrated by the prevailing temperate weather blood disintegrating conditions, viz.: (a) A chilly blood disintegrating humidity, the temperature ranging between 34 degrees and 60 degrees; (b) a windless, atmospheric stasis that permitted the accumulation of toxic blood disintegrating ground gases, and (c) a cloudy, smoky atmosphere that deprived the blood of the beneficial chemical action of sunlight.

Science has long known the life destroying effect of certain toxic gases, as carbon monoxid, when people were confined in an enclosed room with them, but the world war has demonstrated the life destroying effect of toxic gases that cling to the ground long enough to destroy life when in the open air, or outside of any enclosure.

The symptoms of certain war gas poisoning resemble those of summer autumnal coryza, asthma, bronchitis, pneumonia, influenza, peritonitis, cholera morbus and eczema.

Dr. E. B. Krumbhaar in a paper entitled "Rôle of the Blood and the Bone Marrow in Certain Forms of Gas Poisoning," *Jour. A.M.A.*, Jan. 4, 1919, gives the following summary:

1. Certain forms of gas poisoning cause, after an initial leukocytosis, a more or less extreme degree of leukopenia.
2. This usually persists even in the presence of broncho-pneumonia and is very probably an important contributing factor to the high mortality of severe cases.
3. If the leukocyte count falls below 1.000 per cubic millimeter, a "Myelocyte crisis" may bring about a partial amelioration; but in the two cases observed of this kind, this did not serve to protect from a fatal outcome.
4. Lessened blood formation is also indicated by the production of anaemia without blast cell formation and diminution in the number of blood platelets. In the earlier stages the coagulation time is decreased, and in the later stages of severe cases it is increased.

Dr. Krumbhaar's description of the blood in gas poisoning agrees exactly with my description of the blood in asthma. (Jack, "The Biochemical Metabolic Blood Origin of Asthma and Its Scientific Prevention," published by the Critic and Guide Co., 1910.)

Nearly all varieties of gases and many combinations can be found upon the ground in certain localities and at certain seasons of the year, some originating from the ground itself, some from stagnant water, as swamps, some from animal excreta, and some from the decomposition of animal and vegetable matter.

Among the ground gases are found the carbon, sulphur, ammonia, phosphorus, nitrogen and hydrogen group combinations.

Brem, Bolling and Casper state in regard to influenza that: "Finally, the extraordinary hemorrhagic picture seen at necropsy, together with the constant leukopenia in the initial stages, completed the evidence that led us to believe that an important feature of the disease is some kind of blood dyscrasia, which is of grave significance and suggestive of purpura haemorrhagica. In a few patients large pupuric areas developed in the skin.—Laboratory tests to determine the nature of the dyscrasia did not furnish conclusive evidence.

"The conviction gradually developed, therefore, that the influence of the initial infection was a depressant one on the bone marrow resulting in leukopenia, while, on the contrary, the pneumonic infection tended to stimulate, as usual, the production of leukocytes, which gradually increased in number in the blood stream as the depressant influence waned."—Walter V. Brem, M.D., G. E. Bolling and E. J. Casper, M.D., *Jour. A. M. A.*, Dec. 28, 1918.

The cases of influenza that I studied were seen in private practice and the leukocyte count, coagulation and viscosity of the blood were roughly estimated, but what is of scientific interest and value is that the blood and urine changes associated with influenza, together with the clinical manifestations and post-mortem findings, demonstrated that the cause of influenza was a blood disintegration; and that the cause of the disintegration was the three prevailing blood disintegrating weather conditions, or in other words influenza is a meteoro-telluric physico-biochemical hemolytic crisis.

A very noticeable feature of the weather during the influenza epidemic has been a lack of winds. The prevailing weather condition has been that of an absolute atmospheric stasis, a dense, cloudy, humid, smoky, stale atmosphere that had no power of absorption.

During periods in which there was a noticeable wind for a few hours' time the influenza would abate.

In calling the attention of a farmer to the lack of winds during the influenza epidemic, he immediately remarked, "I know it. I have a windmill and it hasn't run enough since the middle of August to be of any use."

This winter thus far is again demonstrating the ancient proverb of a green Christmas and a fat graveyard.

PROPHYLAXIS.

Forests absorb toxic ground gases and equalize the temperature, humidity and winds of the atmosphere, therefore every township of thirty-six square miles should reserve two square miles for forests.

Sleeping apartments should be as far from the ground as possible.

Never sleep in a tent on the ground.

Never sit in a room where the temperature is below 70 degrees.

The ideal location would be near a forest on a high, rocky mountain, in a windy, sunshiny climate where the average temperature was 70 degrees.

All abnormalities of the nose, larynx and respiratory apparatus should be corrected.

ACUTE THYROIDITIS.*

By GEORGE E. BEILBY, M.D.,
ALBANY, N. Y.

IN a series of ninety-one cases operated upon by me at the Albany Hospital for various forms of thyroid lesion, I have met with three instances of acute suppurative inflammation. In two of these cases the infection occurred in normal thyroid glands, and in the third case the infection took place in a cystic adenoma of the thyroid.

Acute thyroiditis, whether occurring in the normal gland or in a pre-existing tumor or hypertrophy, is of comparatively rare occurrence. At first thought, this fact might be difficult of explanation, for the close proximity of the gland to the pharynx, tonsils and lymphatic structures of the throat might well be expected to predispose to infections within the thyroid gland by direct lymphatic extension. A study, however, of the lymphatic supply of the thyroid demonstrates that there is no direct lymphatic circulation between the structures of the throat which are so commonly the seat of acute infections and the thyroid gland. Therefore those cases in which the infection occurs by way of the lymph vessels are, it seems to me, always preceded by a primary focus of infection in the upper portion of the trachea or in the larynx. In the case of infection by the blood stream, which I believe is by far the most frequent avenue of entrance in tumors and hypertrophies of the organ, the processes of degeneration present in such lesions predispose to inflammation, by a lowering of the local resistance of the tissue. It is particularly in adenomata which are undergoing degeneration and contain free blood and necrotic material that such infections most often occur.

The histories of my three cases are briefly as follows:

Case 1.—Mr. S. H. T. Age 64, married, merchant. Admitted to the Albany Hospital July 21, 1916. No. 55354.

The patient's previous health had been good. About one month before entering the hospital he suffered from laryngitis and tracheitis. This condition persisted for about three weeks and was accompanied by almost complete loss of voice and severe cough with a large amount of expectoration. About three weeks after the onset of this throat infection he had a severe chill which was followed by a rise in temperature and by pain in the region of his throat. Through his physician he sought the advice of a laryngologist by whom he was treated with local applications to the throat and internal medication for six days, when a diagnosis was made of acute suppurative thyroiditis, and the patient was referred to me. On admission to the hospital his temperature was 102 and pulse 120. He was suffering from extreme dyspnœa and dysphagia. There was very little perceptible swelling in the region of the thyroid gland but the overlying skin was somewhat reddened and on palpation there was a stone-like hardness of the gland. On account of the unfavorable condition of the patient it was deemed unsafe to administer a general anesthetic and the operation was performed under local anesthesia. This consisted of a free incision of the skin and subcutaneous tissue and exposure of the gland. The capsule was punctured and about 50 c.c. of thick yellow pus were evacuated. Cultures from this pus yielded staphylococcus and saprophytic organisms. The patient's temperature dropped to normal within twenty-four hours and he made a rapid recovery. The wound healed readily and the patient had no subsequent trouble.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 7, 1919.

Case 2.—Mr. F. D. M. Age 48, single, farmer. Admitted to the Albany Hospital April 24, 1918. No. 64156.

The patient had had no previous thyroid lesion. His present illness could probably be attributed to a sore throat from which he suffered five weeks previously. He apparently recovered from this throat infection after a week or ten days but he states that there persisted in his throat a sense of irritation, or as he described it "The feeling of a fish-bone in his throat." Eight or nine days previous to his entering the hospital he noticed some swelling of the throat just below the thyroid cartilage. This was accompanied by pain in this region, occasional slight chills and some febrile symptoms. This man was referred by his physician to a laryngologist by whom a diagnosis was made of acute thyroiditis, and an operation advised. On admission to the hospital this patient was found to be suffering from an extreme degree of pressure upon the trachea and œsophagus. There was little external evidence of swelling but the skin overlying the thyroid gland was reddened and slightly œdematous and there was a characteristic hardness of the gland and overlying tissues. This case was likewise operated upon under local anesthesia and the gland freely opened and drained. Cultures taken from the gland at the time of the operation yielded staphylococcus albus. Prompt relief was experienced from the evacuation of the pus and the patient was able to leave the hospital in about a week. A small amount of drainage persisted, however, for several weeks before the wound eventually closed. The patient has been in good health since.

Case 3.—Mrs. B. L. Age 33, married; has three children, 7, 6 and 4 years of age. Admitted to the Albany Hospital January 10, 1919.

The patient first noticed an enlargement of her neck four years previously, just after the birth of her last child. This enlargement was in the median line of the neck between the thyroid cartilage and the base of the sternum. The increase in size was gradual until about six months ago, since which time there has been a more rapid increase in the size of the tumor. The patient states that she had been very nervous during the past year and the pressure of this growth caused her some discomfort and at times she has experienced difficulty in breathing. In October, 1918, about three months before her admission to the hospital, the patient had a very severe attack of influenza of about ten days' duration. She gives no history of sore throat during this attack. She states that before she was out of bed from this illness her neck began to swell and was painful and that she had a rise in temperature practically every day. On New Year's Day she suffered from a chill and from that time on she grew rapidly worse. Her breathing became more difficult and finally a day or two before entering the hospital she completely lost her voice. She entered the hospital on January 10, 1919. She was found to be suffering from dyspnœa and dysphagia. She was profoundly septic and her condition, due to her long continued illness, was very critical. There was a large and very tense tumor situated in the median line of the neck, extending a little more prominently to the left side. Diagnosis was made of the infected thyroid adenoma. The patient's temperature on admission to the hospital was 103.5 and pulse 120. Under local anesthesia the tumor mass was opened and a large amount of purulent fluid mixed with blood and broken down thyroid tissue was evacuated, and free drainage was instituted. Cultures made at the time of the operation yielded a hemolytic streptococcus. The patient was very ill for a period of two weeks but was eventually able to leave the hospital with a small discharging sinus still persisting. This later completely healed and the patient is now slowly regaining her weight and strength. No attempt was made in this case to remove the thyroid adenoma but she was advised to return at a later date to have this done.

These three cases illustrate very clearly the types of thyroid infection which we meet. In cases one and two there was no history and no evidence of a previous thyroid lesion. These cases were preceded by infection of the throat with probably an extension downward of this infection and involvement of the larynx and trachea, and it seems fair to assume that there was a direct extension of the infection, probably by way of the lymphatics through the trachea into the thyroid gland. In the third case, as the history would indicate, the patient had suffered for four years with an adenoma of the thyroid which had undergone cystic degeneration. In this case the infection of the thyroid adenoma was undoubtedly hæmatogenous in origin and was a part of her general influenza infection. In the two instances in which the infection was a direct extension from the throat the cultures yielded staphylococcus aureus and albus respectively, and in the case of the blood infection we had to deal with the streptococcus.

The symptoms of acute thyroiditis vary accordingly as the inflammation of the gland is a primary affection or arises in some lesion previously existing. In the former, patients usually suffer from chills, malaise and headache, common to all infectious diseases. Pain is felt in the region of the gland, more pronounced on one side because the process usually begins in a single lobe, often radiating to the ear and side of the neck, lancinating in character and greatly aggravated by extension of the head. As a result the attitude may be somewhat characteristic, the head bowed and held very rigid. Local swelling is rarely noticed early and is never a marked symptom. Difficulty in breathing and swallowing are present, the degree depending upon the severity of the infection and the extent of gland involvement. The voice may be affected, even absolute aphonia is seen and an irritative cough with slightly blood-stained expectoration or a true hæmoptysis may be present.

One thing which impressed me particularly in all of my cases was the difficulty which is experienced in arriving at a correct diagnosis. This I think is the particular lesson which these cases bring to us. It is true that acute suppurative infections occurring in a normal thyroid are of comparatively rare occurrence. This type should not be confused with the milder forms of inflammation which are often seen during many of the acute infectious diseases, relatively most often after typhoid fever in which the symptoms are of a much milder nature and which seldom require surgical intervention. It is then easily understood, because of the rare occurrence of the affection, why these cases often go for a considerable time unrecognized. This is not due to any lack of care or attention on the part of physicians, but to the absence, I might say, of the usual local signs of acute inflammation and suppuration. Let us see why this is so.

The normal thyroid gland is situated at the front and sides of the neck and surrounds the upper part of the trachea and œsophagus like a horse shoe. The gland is surrounded by a closely adherent connective tissue capsule derived from the pre-tracheal layer of deep cervical fascia. The anterior and lateral portions of the gland are covered by the capsule. Passing around the sides of the gland to its posterior surface this capsule splits into two portions. One remains in contact with the gland and invests its posterior surface. The other, the thicker of the two, passes to the posterior surface of the pharynx and œsophagus, thus enclosing them with the larynx, trachea and thyroid gland in a common sheath.

It is readily seen, then, that with an inflammatory process arising within the substance of the gland, the swelling which occurs produces its first and most marked effect upon the trachea and œsophagus which it surrounds on three sides. The capsule being but slightly elastic, under the influence of sudden increase in the volume of gland, the lateral lobes are approximated, exerting a side to side pressure upon the trachea and œsophagus. Thus the earliest symptoms, with the exception of pain, are those of tracheal and œsophageal stenosis. It is my experience that the cause of such stenosis is apt to be sought for within the throat rather than as due to compression from without. Both of these cases had been referred by their physician to a laryngologist because it was considered probable that they had to deal with some process within the larynx or trachea. Of particular interest in this connection is the lack of swelling that is manifest in the region of the gland in these cases of acute infection of the normal thyroid. Herein lies the explanation of failure to recognize the true condition. A symptom, however, which is pathognomonic is the stony hardness of the gland elicited on palpation. I know of no other condition in which the gland imparts a similar feeling, unless it be carcinoma. Here the history and the absence of fever in the latter condition should make differentiation of these conditions easy.

In the case of infection occurring in a pre-existing thyroid lesion as illustrated in the third case here reported, the symptoms of the local inflammatory process were obscured by the general infection from which the patient was suffering. In fact, as the history in this case indicates, the symptoms of the acute infection had not completely subsided when the local process in the neck began and it was thought that the patient was suffering from a relapse of the influenza. Only after the local process had developed to a considerable degree was the exact condition recognized. The severity of the pressure symptoms in cases of this type depends largely on the location of the tumor or cyst which is the seat of the infection. In other words, if the pre-existing lesion already causes pressure on the trachea and the structures of the neck, with the advent of an infection this symptom will be greatly increased. If, on the other hand, we have to deal with a tumor or cyst that is well outside the main sheath of the gland capsule, pressure symptoms will be relatively slight.

The hypertrophies of the gland, both the colloid and hyperplastic types, in which degenerations are rare, are far less frequently involved in acute inflammatory processes.

The treatment of acute thyroiditis and of suppurative processes in pre-existing thyroid lesions is, *per se*, like that of other local inflammations. There are, however, a few points of special importance which have been gained in the study and treatment of these cases of which I desire briefly to make mention. Inasmuch as the local condition of the throat is such that the administration of a general anesthetic might prove both difficult and dangerous, whatever operative procedure is undertaken should be done under local anesthesia. These patients are often so toxic that very little anesthesia of any nature is required. It is essential that a free opening be made in these cases and drainage established as soon as a correct diagnosis is made. Care should be taken that every collection of pus is reached. Where drainage of more than one lobe of the gland is necessary, it is usually possible to establish this through a single opening in the capsule. As little injury as possible should be done to the gland. No extensive surgical measures, such as partial excision of the gland or removal of tumors or cysts, should be undertaken in the presence of such serious infection. Rather, these procedures, when deemed necessary, should be reserved for subsequent operation. A method of opening the gland which I have followed with success in these cases consists of a free incision of the skin and subcutaneous tissue, retraction or incision of the overlying muscles, and a thorough exposure of the gland or tumor. Then, with a hemostat, at a point where no large vessels are visible, the capsule and gland substance is punctured. The opening can easily be enlarged so that the finger may be introduced and a thorough exploration made without danger of serious hæmorrhage or injury to the trachea or œsophagus. The wound should be left completely open so that free drainage is assured.

In conclusion I would emphasize the following:

1. The relative infrequency of acute thyroiditis in either the normal gland or in pre-existing pathological conditions.
2. The condition, particularly in the early stage, is apt to be unrecognized.
3. The diagnosis can be made more readily if the possibility of acute thyroiditis is borne in mind and confirmed by the stone-like hardness of the gland.
4. Treatment by simple incision and puncture under local anesthesia, avoiding all possible injury to the gland tissue, will give the best results.

A METHOD OF COMPUTATION FOR OCULAR INJURIES APPLICABLE TO THE NEW YORK STATE WORKMEN'S COMPENSATION LAW.*

By ALBERT C. SNELL, M.D.,
ROCHESTER, N. Y.

At our annual meeting last year I presented a paper which considered "Some Problems in Visual Economics as Applied to the New York State Workmen's Compensation Law." I pointed out in this paper that since our law definitely fixes the rate of compensation for ocular injury, the usual accepted formulæ for assessing damages are not applicable; that our problem is simply to figure the percentage loss of vision; that a percentage loss of vision cannot be determined from the data usually obtained from the present questionnaire, Form CR 69; and that the differences of opinion in regard to the percentage of loss of vision is largely due to a lack of understanding in regard to the relative value of the different essential elements of vision which the present questionnaire form does not bring out. In that paper I did not offer a solution of the problem. The object of this communication, however, is to suggest a method by which compensation for ocular injury may be computed accurately and scientifically, and to invite your criticism of the subject as I may present it.

At the outset of this paper I wish again to emphasize the fact that most differences of opinion in regard to percentages of lost vision are largely based on the fact that some oculists use a scientific standard of measurement, while others use an economic standard. Since our law definitely fixes the rate of compensation for the loss of an eye, or for both eyes, or for the partial loss of vision, only the scientific standard of measurement should be used.

The New York State Workmen's Compensation Law provides that the compensation for the loss of both eyes, which is considered a total permanent disability, shall be 66 2/3 of the average weekly wages during the disability; for the loss of one eye, 66 2/3 of the average weekly wages for 128 weeks. The loss of use of an eye is regarded as equivalent to the loss of an eye. A reading of the law will show that medical opinion is unnecessary to compute ocular damages when there is a *total* loss of one eye or a total loss of both eyes. The law definitely fixes the compensation when either of these facts is established. Only when there is a partial loss of vision of one eye or of both eyes is the opinion of an ophthalmologist apposite. And, since the law definitely provides that awards for such loss shall be for the "proportionate loss or the proportionate loss of use" it behooves the examiner of such a case, before anything else, to determine the *percentage* of the vision remaining.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 7, 1919.

May I here state, parenthetically, that there is still evidence that medical opinion in regard to ocular damage has not grown more harmonious during the past year. A commissioner with whom I have had some correspondence recently wrote:

"It might interest you to know that quite recently I had a very interesting eye case come up before me. This man was examined by five different oculists, two of the doctors having examined him twice, making in all seven examinations. Estimates of the loss of this man's eye run all the way from 10 per cent loss of vision to 60 per cent loss. It seems that the more doctors who examined the eye, the more differences of opinion we got."

A careful analysis of the gross differences of opinion shows that different oculists do not take into consideration all the useful elements of vision. Most oculists form an opinion based on the correct measurement of central visual acuity only, omitting entirely other elements of equal value. Some medical opinion is purely empirical. In order to formulate any scheme for the equitable, just, and scientific computation for ocular injury, the fundamental principles of vision should be analyzed and this complex act resolved into its component parts. Normal vision essentially comprises three easily separable functions. The first is that of detail perception. The second is that of allocation; the third is that of depth perception. Detail vision is commonly called "visual acuity" or "central vision" and is that part of the vision used in the perception of detail. The second part of vision, allocation, is commonly known as "field vision" or "peripheral vision" and is principally concerned with the finding or locating of an object. The third element of vision, commonly known as binocular, concerns orientation and is of great value in assisting our judgment of the relative size, form, shape, and distance of objects. It is that part of vision which enables us accurately to judge depth.

The first two elements of vision are mutually dependent, although they may functionate separately. An individual without field vision would have great difficulty in finding any object in order to study its detail. He would not be able to find his way about, especially at night. He would have great difficulty in detecting moving objects or to follow them. When field vision alone is present an individual would be unable to read or to observe and then to interpret the finer details of any object. Therefore, since these two elements are thus mutually dependent they are of equal value. They are so regarded by the overwhelming weight of opinion. With reference to the third element, that of the binocular function, all authorities agree that it is not insignificant or valueless. Therefore it must have some mathematical value. Considering the subject of the value of binocular vision from the statistical side and from the point of view of experience, both being based on the study of the loss of efficiency in workmen who have lost this faculty, we find that in Europe for the loss of depth perception or stereoscopic vision awards are made which are approximately 25 per cent of that awarded for the total loss of one eye. This award is made usually for one year and is reduced thereafter as a workman learns to become more efficient by the use of other faculties which greatly compensate for the loss of binocular vision; so that the average award for the loss of this function for skilled workmen is 20 per cent. This I find to be a proper and equitable award for the complete loss of binocular vision. This percentage (20) is determined by the relative loss of efficiency to the workman whose occupation requires a good sense of distance and depth.

According to some schemes for computing ocular compensation, a higher percentage than 20 is given for the loss of the binocular function. However, when this is done an award is made only to the skilled workman who is put in a separate class, and no award is made at all for the unskilled. This is manifestly unfair and unjust as applied to our law, when we consider that in figuring loss of vision we are asked only to give the percentage of loss without reference to the skill of the individual, and also that the more highly skilled, by virtue of the fact that they receive higher wages, automatically receive higher compensation for loss of vision. Even the most unskilled common laborer has lost some element of his vision and is less efficient when he has lost the binocular sense and is therefore entitled to proper compensation. Hence, in adjusting compensation for the loss of this element of vision, it is only necessary to determine, in a scientific way, the relative value of this function without considering its economic usefulness to different individuals. We find that the great weight of authoritative opinion and experience fixes the value of binocular vision at 20 per cent.

From these premises a simple, practical, and scientific method for computing the proper amount of compensation due for any ocular injury is easily formulated. Visual acuity and allocation being mutually dependent must have equal value. The value of the binocular vision from the above has been determined to be 20 per cent of the entire functional value of one eye. Therefore, we find that when the unit of central vision is placed at 100 and the unit of peripheral vision is placed at 100, the unit of binocular vision (being 20 per cent of the whole) would be 50.

Since visual acuity is commonly known as central vision, we will designate this by the letter C, and since the sense of allocation is commonly known as "field vision," let this be designated by the letter F, and let the binocular function be designated by the letter B.

$$\begin{aligned} \text{Therefore, let } C &= 100 \\ F &= 100 \\ B &= 50 \\ \hline 250 &= \text{total} \end{aligned}$$

Then each essential factor of vision is reckoned on a convenient, accurate and percentage basis so that partial loss of one or more of these elements or factors may be readily determined.

To measure central vision the universally accepted Snellen standard for the measurement of visual acuity should be used and the result should be expressed in a decimal. The following table will show the decimal equivalent for the usual foot and metre standards in common use:

Table of m. and ft.

MEASUREMENT OF CENTRAL VISUAL ACUITY EXPRESSED IN A DECIMAL.

6 M	15 ft.	20 ft.	
6/3	15/8	20/10	= 2.00
6/6	15/10		= 1.50
	15/15	20/20	= 1.00
6/7.5		20/25	= 0.80
6/8	15/20		= 0.75
6/9		20/30	= 0.66
6/10	15/25		= 0.60
6/12	15/30	20/40	= 0.50
6/15		20/50	= 0.40
	15/40		= 0.37
6/18		20/60	= 0.33
	15/50		= 0.30
		20/70	= 0.29
6/24	15/60	20/80	= 0.25
		20/90	= 0.22
6/30	15/75	20/100	= 0.20
6/60	15/150	20/200	= 0.10

When the disability involves both eyes the central visual acuity for each eye should be measured separately.

The field of vision should be determined in the familiar and accepted ways using perimeter or Walker's discs. For defining the limits of the field appropriately sized objects should be used (20 mm.), whilst for the determination of the more central areas of the field, smaller test objects should be employed (3 to 5 mm.). Any and every defect of the field should be charted and made a part of the record of the case. Scotomata, both relative and complete, should be accurately measured and charted.

The amount of field vision should be expressed in a decimal. This decimal is determined in the following way: Since the normal field extends from the point of fixation upward 60°, nasalward 60°, downward 70° and templeward 90°, the entire field has a mean radial width of 70°. Therefore, radial width of any part of the field remaining after partial loss, or its equivalent in concentric area, is the numerator and 70 is the denominator. Convert this common fraction into a decimal. The percentage loss of any part of the field is thus expressed in a fraction by using the radial diameter of the lost area of the field as the numerator and the normal mean radial diameter (70°) as the denominator. Thus the percentage loss in a field which has a contraction of 20°, or an equivalent in concentric loss, equals 20/70 or 0.285. A 40° contraction equals 40/70 or a 0.57 loss. A central scotoma with a radial measurement of 15° equals 15/70 or 0.21 loss. One of 25° equals 25/70 or 0.357 loss. A complete hemianopsia in one eye equals the loss of 50 per cent of the entire field of that eye. It matters not if it be temporal or nasal. Thus the loss of any part of the field of one eye or of both may be accurately measured and expressed mathematically by means of a decimal fraction. Since the total percentage amount of remaining visual acuity and not the amount lost is reckoned in measuring this factor, the same method should be followed with the field; the amount of field remaining and not the loss should be determined.

In determining the measurement of the binocular factor we may be guided by certain well established facts and from these we may formulate some rules of great value in determining the percentage of this function remaining after ocular injury. The following conditions being present there is a total loss of binocular function: First, when eyes constantly squint, whether convergent, divergent or vertically separated; second, when a difference of 0.70 or more exists between the visual acuity of the two eyes (visual acuity to be determined with the use of proper correcting glasses); third, when vision in one eye is less than 0.10. Binocular vision and good depth perception may be assumed to be present when the refraction is equal in both eyes and when there is no squint, provided the vision of one eye is 1/10 or more. "With the unilateral reduction of the visual acuity to not less than 1/6 (20/120) in one eye, good binocular vision may be assumed without special testing" (Axenfield, Tenth International Congress, Lucerne, 1904). A good method for testing depth perception in the doubtful cases is the Hering's drop test method. Also many simple experiments may be used to test one's ability to judge distance and depth at arm's length; such as the picking out from a curved pin cushion pins with different colored heads stuck in at different levels and distances; quickly dipping pen into ink bottle; the touching of a lead pencil to other designated points which should be located at various distances and on different levels, etc. Use all necessary means and methods that are at one's command and a fairly accurate measurement of this factor will be made.

By the use of the data thus obtained, which give the measurement of value for each of these three essential elements of vision following any partial loss to one or more of these elements, the exact proportion of the vision which remains after ocular injury may be accurately computed. For example, following an injury to one eye there remains a small central corneal scar with resultant central visual acuity of 20/40 or .50, without disturbance of the field and without loss of binocular function.

Therefore C = 50
F = 100
B = 50

200 ÷ 250 = .80, amount of vision remaining.

Therefore the amount of vision lost is 20 per cent.

Another case is presented in which the central vision is found to be 20/60. The field shows a relative central scotoma extending concentrically and approximately 20° from the point of fixation. A 3 mm. object is not seen in this zone, but a 10 mm. is, showing that the zone is only 1/3 efficient. The entire field then is 56/70 or 0.8 normal. The vision in the other eye is normal. Here, binocular sense is undisturbed, since vision is not less than 0.7. Therefore,

C = 33
F = 80
B = 50

163 ÷ 250 = .65, amount of vision remaining.

Another case presents the following data: Central vision in injured eye of 20/50, a normal field, an eye that diverges constantly 5° to 10° since the injury, and the other eye normal. In this case, although visual acuity is 0.4, it is not in actual use because of the divergence. Therefore it has only potential value, which reduces the measured value 50 per cent. Therefore,

C = 20
F = 100
B = 0

120 ÷ 250 = .48, amt. of vision remaining.

Another case following severe injury with resultant best central vision of 20/30, but with a complete temporal hemianopsia and a convergence of 10° would be computed thus: Central vision acuity of .67 being potential only is reduced 50 per cent because of the divergence. The divergence also causes complete loss of binocular vision. Therefore,

C = 33
F = 50
B = 0

83 ÷ 250 = .33, amt. of vision remaining.

The value of factor C (acuity of vision) in any case presenting normal acuity, or any percentage of normal acuity, which is not in use because of a squinting eye or because of the lack of fusion ability, should be reckoned as 50 per cent of the Snellen measurement, since it has only a potential value.

When there has been a partial permanent loss of vision to both eyes,* the method of reckoning the remaining vision is the same as that for one eye described above, the total vision being computed separately for each eye, except that the factor of binocular vision (factor B = 50) should be reckoned with one eye only, and with that eye having the least central visual acuity or the greater muscle disturbance, the total units for entire vision remaining 250 for this eye. The total visual unit would therefore be 200 for the other eye.

For example, a man has received an injury to both eyes, with a resultant visual acuity of 20/30 in the right and 20/50 in the left eye, the fields of both remaining normal and no muscle disturbance. The loss of central vision 20/50 in the poorer eye does not lessen his binocular vision. Therefore for the left eye

C = 40
F = 100
B = 50

190 ÷ 250 = .76, amt. of vision remaining.

For the right eye

C = 66 2/3
F = 100

66 2/3 ÷ 200 = .83, amount of vision remaining.

Should there be presented the same case with the same resulting conditions except some additional muscle disturbance, causing a slight permanent squint, thus eliminating binocular vision, the computation would be for the left eye (because of the squint C is reduced 50 per cent).

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* N. Y. S. W. C. L. provides that the loss of both eyes shall constitute permanent total disability and that the compensation therefore shall be 66⅔ per centum of the average weekly wages to be paid to the employee during the continuance of such total disability.

C = 20
F = 100
B = 0

120 ÷ 250 = .48, total remaining vision.

For the right eye vision would remain .83.

To illustrate a case in which all three factors are partially involved, let us consider an injury to right eye with a resultant visual acuity of 20/200, a relative central diminution of entire field to .10, due to a large nebulous corneal scar; and in the left a visual acuity of 20/30, a relative central scotoma, reducing field to .70, due to a small central scar. Then for the right eye, having found the binocular sense of depth slightly useful and present, the computation would be

C = 10
F = 10
B = 20

40 ÷ 250 = .16, amt. of vision remaining.

For the left eye:

C = 66 2/3
F = 70

136 ÷ 200 = .68, amt. of vision remaining.

In the monocular aphakic cases the vision should be computed thus: assuming one normal eye, and visual acuity of 20/40 in the aphakic eye, the acuity of 0.5 would be reduced 50 per cent since it is potential only, and binocular vision would be lost; therefore

C = 25
F = 100
B = 0

125 ÷ 250 = .50, amt. of vision remaining.

When a squint is of high degree, or annoying diplopia is present so that one eye must be closed, the value both of central vision and of field vision must each be reduced 50 per cent of their actual measurement since these have only potential value. In this class fall all traumatic muscle cases whether they result from local or from central lesions. For an example in computation in this class, assuming central vision and field vision to be normal, these would be reduced 50 per cent and binocular function would be absent. Therefore

C = 50
F = 50
B = 0

100 ÷ 250 = 0.4, amt. of vision remaining.

I find that in computing the value of vision as a whole, considering accurately the relative values of each of the factors of vision according to the method suggested, the results do not differ greatly from those obtained by the use of other accepted methods. However, the proposed method, which combines parts of other methods, is made applicable to our law and I believe that its simplicity and definiteness should recommend it to your attention. There are some cases of ocular injury in which any scheme of scientific or mathematical measurement of vision will not adequately express the loss sustained. This is particularly true of those cases in which there has been serious loss of vision to both eyes. Our law recognizes that the total loss of two eyes is a much greater loss than that of one eye and provides compensation accordingly. But for the serious loss of vision, not total, compensation is often much less than the economic loss to the individual, and all purely scientific standards for the measurement of lost vision in such cases do not sufficiently or adequately express the loss sustained. In all these cases and in others in which there is a conflict between a scientific standard and an economic one, in order that justice may be done to the injured, the examiner should state whether or not the measure of vision as scientifically determined fully represents the loss of visual efficiency. If his reasons for his conclusion and opinion should be added, those interested would be greatly helped in fixing the proper compensation justly due.

Discussion.

Dr. FARRELL of Utica: I appreciate the scheme presented by Dr. Snell for computing loss of vision in compensation cases. It takes into account all the important factors (except the cosmetic result) and at the same time is simple enough to apply in everyday practice.

On the whole, the commissioners under the Workmen's Compensation Law are disposed to be fair and they depend on us to estimate the percentage loss. It is exceedingly important, therefore, for us to adopt a uniform method of computing the loss of vision.

Henceforth I will use this method.

Dr. SNELL in reply pointed out that the cosmetic result had no bearing on the loss of vision, but came under a separate provision of the law for disfigurement.

STANDARD SYPHILIS NO. 1.

(Illustration of Form.)

By MAJOR J. BAYARD CLARK,

NEW YORK CITY.

THE title of this paper, Standard Syphilis No. 1, has been used to designate the formula employed in the treatment of all early and uncomplicated cases of syphilis during the last six months at the Base Hospital of Camp Logan, while the Genito-urinary Service has been under the direction of the writer.

This formulated course of treatment for the ordinary case of syphilis has been in every way so satisfactory and successful in our experience that a somewhat detailed account of its use seems worth recording.

It is true that only a beginning has been made with this standardized form of treatment, but the outlook for a larger employment of this plan seems so bright with possibilities that it is hoped an extensive trial awaits it, and that careful records of its employment will be kept.

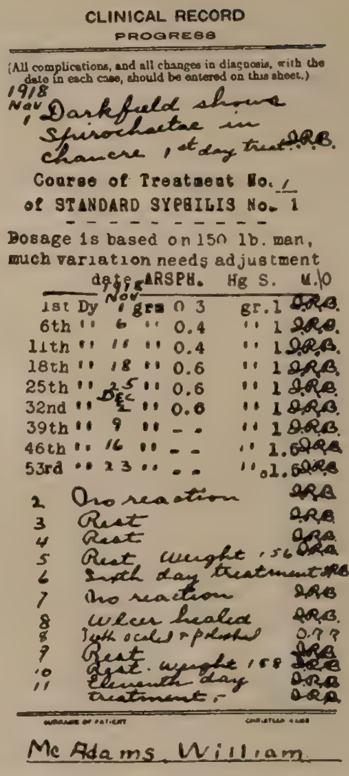
It would seem to be as well suited to the individual case of syphilis as to the collective care of these cases for which it was designed. In giving the technic used the essential points in the Surgeon General's Circular No. 14 will be mentioned.

In speaking of and recording this treatment we fell into the way of an abbreviated name for it and it soon became spoken of and known as "S. 1."

In the syphilis wards and treatment rooms the formula was posted so that not only the medical officers, nurses and corps men, but the patients could become familiar with the routine. In this way the staff knew just what was required of them and the patients, if they were on S. 1, knew just what they were to receive. The results from both sides were most gratifying. At the earliest possible moment after the diagnosis was established and the patient was found suitable for this treatment he was put on Standard Syphilis No. 1, and his progress sheet of the Clinical Record stamped with the S. 1 formula, which was filled out as to dates upon which the medication fell due, and which was later initialed by the medical officer when he had given the treatment. It was found that the great majority of cases were in every way suitable for S. 1. The late cases and those with visceral lesions were very few in our experience.

In our routine "dark field" examinations on all genital or suspicious sores, a surprisingly large number of "clinical" chancroids revealed the spirochaete pallidum. This item is far too important not to be mentioned.

Out of 102 cases upon which we began the S. 1 treatment, sixty were carried through the first course. In three cases the course was broken owing to reactions, which, however, were never threatening, and four cases were laid off owing to a persistence of albumin in the urine. It may be mentioned here that the few cases which showed albumin, other than the four referred to, only exhibited a very transient albuminuria which cleared up in each case before the next injection.



CLINICAL RECORD
PROGRESS

(All complications, and all changes in diagnosis, with the date in each case, should be entered on this sheet.)

1918 Nov 1 Darkfield shows Spirochaetae in chancre, 1st day treat. J.R.B.

Course of Treatment No. 1
of STANDARD SYPHILIS No. 1

Bosage is based on 150 lb. man,
much variation needs adjustment

	date	ARSPH.	Hg S.	M.O.
1st Dy	1918 Nov 1	grm 0 3	gr.1	J.R.B.
6th "	6	" 0.4	" 1	J.R.B.
11th "	11	" 0.4	" 1	J.R.B.
18th "	18	" 0.6	" 1	J.R.B.
25th "	25	" 0.6	" 1	J.R.B.
32nd "	Dec 2	" 0.6	" 1	J.R.B.
39th "	9	" - -	" 1	J.R.B.
46th "	16	" - -	" 1.6	J.R.B.
53rd "	23	" - -	" o1.6	J.R.B.

2 No reaction J.R.B.
3 Rest J.R.B.
4 Rest J.R.B.
5 Rest weight 156 J.R.B.
6 Sixth day treatment J.R.B.
7 No reaction J.R.B.
8 Ulcer healed J.R.B.
8 Teeth scaled & polished [illegible]
9 Rest J.R.B.
10 Rest. weight 158 J.R.B.
11 Eleventh day treatment.— J.R.B.

SURNAME OF PATIENT CHRISTIAN NAME

Mc Adams, William

Clinical record stamped with Standard Syphilis No. 1.

The balance of the cases going to make up the 102 started were not finished because either of discharge to duty and out of our reach or because of demobilization.

We were able to take Wassermanns on nine patients one month after their first course was completed, and out of those eight showed a negative reaction; the other was a case of eight months' standing before S. 1 was begun in his case. Of the three which had reactions severe enough to make it seem best to stop the treatment, two felt dizzy and had severe headache after treatment and which seemed to grow worse after each treatment. The other one, after the third injection, had an attack of dyspnea while on the table and such violent abdominal pains and diarrhœa during the evening that it was thought best to break his course.

Of late reactions, those occurring several days after arsphenamine, there were none observed.

We employed the following technic: The patient went without the meal before and after the arsphenamine injection. All details as prescribed on S. 1 form regarding examination of urine, etc., were exactly followed. On the morning of the day arsphenamine was given, freshly distilled water was obtained and a freshly prepared solution of 4 per cent. sodium hydroxide was made up. A simple gravity apparatus was used—a container, a rubber tube and needle connection. Straight needles were employed. The strictest sterilization was followed.

The arsphenamine ampules were kept immersed in 95 per cent. alcohol. The drug supplied was from the Dermatological Research Laboratory. It was dissolved in hot distilled water. The greatest care was used to break up all lumps and to dissolve with the least possible commotion, so that the degree of oxidation of the drug was as little as possible. Solutions which were not clear and of a characteristically yellow color were discarded. To each decigram of arsphenamine 25 cc. of water was used. For each decigram of arsphenamine to be neutralized .9 cc. of the 4 per cent. sodium hydroxide was employed.

The rubber tube was filled with normal salt solution and the prepared arsphenamine solution was poured into container through sterilized filter paper. The solution was allowed to flow into the vein slowly; at least fifteen minutes should be consumed in allowing a full dose to flow into the blood stream.

The preparation of mercury, as will be noted on the form, is 33 per cent. of the salicylate in olive oil. This is given on the same day with the arsphenamine. A one grain dose is approximately three minims, so that care must be used in so high a suspension, in giving the injection. The bulk of one dose is so small that little trauma, hence little pain, accompanies this form of mercurial medication.

In our series of cases there was only one with a suspicion of salivation. That we had a dentist on the genito-urinary service who devoted his entire time to the care of our patients is probably the reason for this. Of other complications, such as dermatitis or jaundice, there were none. These things we attribute to two reasons: the drugs used proved to be a good lot and the steps of our technic were carried out with the utmost care. All cases were followed with weekly Wassermann tests.

In summing up our experience with this formulated treatment in the early and uncomplicated cases of syphilis, and exclusive of the outspoken neuro syphilides, it can be said that the results have been most gratifying. The medical officer, once he launched his patient on this plan, was relieved of the burden of detail involved in setting the time of each succeeding treatment, and saved from the temptation of veering from one form of medication to another, which is so fatal to any harvest of useful facts.

From the standpoint of the patient, it proved a peculiar blessing, for it carried a conviction that he was being driven the straightest of courses to the goal he was most anxious of anything else in the world to reach, and this was enhanced by the favorable progress all his neighbors in the same boat as himself were enjoying and which even to his untutored eye was plainly evident.

STANDARD SYPHILIS NO. 1.

A Routine Course of Treatment for Ordinary Fresh Cases of Syphilis, in Otherwise Healthy Men.

(To be interrupted in the event of dermatitis, jaundice, or other signs of intolerance supervening.)

Each patient to be carefully scrutinized for signs of stomatitis or general malaise, his weight to be taken; and his urine tested before each injection and after it.

In conjunction with the employment of this course of treatment each Medical Officer shall be familiar with—"Proposed Modification of Circular No. 14, W.D., Office of the Surgeon General."

Patients are to be treated at Base Hospital until open lesions are healed, when they will be sent to Development Battalion or Regimental Surgeon for completion of treatment.

The scheme of arsphenamine dosage is based on 150 pound men—or one decigram to about 30 pounds body weight.

	ARSPHENAMINE (Intravenously)	HG. SALICYLATE 33% in Olive Oil (Intramuscularly)
1st day	grm. 0.3	grain 1.
6th day	grm. 0.4	grain 1.
11th day	grm. 0.4	grain 1.
18th day	grm. 0.6	grain 1.
25th day	grm. 0.6	grain 1.
32nd day	grm. 0.6	grain 1.
39th day	grm. —	grain 1.
46th day	grm. —	grain 1.5
53rd day	grm. —	grain 1.5

One month rest, then take Wassermann; if positive, repeat entire course; if negative, repeat the Hg alone.

At end of second course, rest two months, then take Wassermann and give third course in accordance with rule for second course.

During second year, if Wassermann is positive, repeat entire courses as above. If negative, give two Hg courses with four months between.

HELPING THE BACKWARD CHILD.*

By FRANKLIN W. BARROWS, M.D.,

ALBANY, N. Y.

IT is written in The Talmud that "The world is saved only by the breath of the school children."

This ancient proverb is being confirmed today in a way that startles the whole American people. We have just passed through a great conflict to save the world by the force of arms against an armed foe. We have called millions of our men from civil life to the more exacting service of a military expedition, and we found hundreds of thousands of them unfit. We know to our dismay that if we had bestowed more care on the health and stamina of the school children of the nineteenth century, we would have had more strong men to fight our battles. From statistics already made public we know that our draft boards have rejected, for physical and mental defects, between thirty and forty per cent of the men drafted for military service. We know that a large proportion of these defects could have been prevented in childhood and many are curable even now.

Let me give you the lessons of this unwelcome discovery as expressed in the words of some of our prominent medical men.

Dr. Isaac W. Brewer, Major, M. R. C., says:

"As a result of my recent experience in the examination of recruits, I am more than ever convinced of the great importance of semi-annual physical examinations for all adults. I am also impressed with the need for more careful supervision of the physical wellbeing of the school children. Not only should we have careful physical examinations of each child each year, but these examinations should be immediately followed up by appropriate treatment and training. This is no longer a local question to be decided by the unthinking voters of the community but is a national problem upon the solution of which depends the virility of our race."

(*New York Medical Journal,* February 2, 1918.)

Dr. Eugene L. Fisk, Medical Director of the Life Extension Institute, says:

"In the examinations of large groups of supposedly healthy persons, busy at their work, the Life Extension Institute found practically all showing some form of impairment, and more than 50 per cent in need of medical or surgical attention. These findings led to the forecast, before the draft examinations took place, that among the population of military age, from 19 to 45, at least 50 per cent would be found unfitted for military service, even under relaxed war standards, which are necessarily less rigid than those for the maintenance of a small and select peace army."

(*Journal, A. M. A.,* February 2, 1918.)

Dr. Fisk analyzes the total rejections by local boards and cantonments and finds that they amount to between 30 and 40 per cent, substantially as was predicted by the Life Extension Institute. In discussing these results, he says:

"The intense interest in the findings of the draft examinations can be utilized to arouse the people to a sense of their need. Can there be any doubt, with these figures facing us, of the need for child hygiene, for better government of the hygiene of the young, of the tremendous importance of universal military and physical training, of standardized periodic physical examination? Are we going to wait another fifty or a hundred years for another world devastating war before we again have a physical try-out of our young men? Let us move swiftly to correct the evils that the war has revealed with pitiless verity. Like a soft and pampered athlete out of training, this nation went to war. Only the exhaustion of our enemy and the devoted sacrifices of our allies put us on anything like an equality with our trained and prepared antagonist. Only our immense population with its nucleus of stalwart and eager fighting men saved us from a shameful exhibition of inferiority in equipment to maintain our civilization and our ideals of government.

"Let us remember that 60 per cent of this substandard condition is preventable; that 30 per cent is due to poor general physical condition remediable by proper nutrition and physical training and personal hygiene; that 30 per cent is due to defective eyes and bad mouth conditions, and that 10 per cent is due to neglected surgery.

"This is no time for ridiculous national self-sufficiency. There is real work to do; and the reactionary, the standpatter, the man who thinks everything is as it should be, is as dangerous as an alien enemy. Let us face the truth and then cheerfully and bravely assume the work of making up for lost time."

(*Journal, A. M. A.,* February 2, 1918.)

Dr. L. Emmett Holt, Chairman of the Child Health Organization, says:

"The selective draft has revealed a surprising and appalling deficiency in the health and vigor of the young men of draft age, largely due to neglect of proper supervision and guidance during the period of growth, i.e., the school age. If the defects revealed had been recognized early in school life it would have been possible in large measure to correct them. Infant welfare agencies are already taking care of the first years of life, and some attention has been given to the health of the child in industry, but the army of twenty million school children has as yet received very scant consideration.

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* Read before the Eighth District Branch of the Medical Society of the State of New York.

"Medical school inspection, even when it now exists, is as a rule entirely inadequate. Indeed, the business of keeping the children in good physical repair is, as now conducted, a disgrace to the country. The great majority of people entirely fail to appreciate the significance of physical defects revealed by health examinations, but this fact does not lessen in any way the injury done to the children by such neglect."

(*The Survey,* June 15, 1918.)

Dr. Frederick Peterson reminds us that "we need a Hoover for the children—a children's health administrator," and adds:

"We are appalled that our selective draft of young men who fought our battles in France and Flanders reveal defects in an average of nearly 30 per cent—these young men who were the school children of yesterday. What was the matter with the schools of yesterday which took them in and returned to us only two-thirds as able-bodied citizens? The answer is found in the schools of today.

"Authorities show us that there are physical defects in 75 per cent of the 20,000,000 school children of today, most of them preventable and remediable, heart and lung diseases, disorders of hearing and vision, malnutrition, diseased adenoids and tonsils, flatfoot, weak spines, imperfect teeth—and among them 1 per cent of mental defect. The children in country schools are worse off than in city schools. We are sending the best we have to foreign battle fields. We are retaining the 30 per cent of imperfect citizens to leaven the race of tomorrow.

"Compulsory education we have—compulsory feeding and training of the mind. Compulsory health we must have—compulsory feeding and training of the body."

(*Journal A. M. A.,* August 17, 1918.)

Among other items in his program for reconstruction, Dr. Peterson recommends:

"Every child should be regularly weighed, measured and examined and a health record kept, which should accompany him throughout his school life. It should be the duty of the authorities to see that the defects of our young citizens are corrected, and disorders of growth and nutrition remedied. As malnutrition is one of the most serious conditions, a hot luncheon should be made available for every child and every teacher. The health examination should include dental inspection and treatment."

(*Journal A. M. A.,* August 17, 1918.)

These warnings and exhortations, voiced by leaders in our profession, are our warrant for calling your attention today to the needs of the backward child. It is the backward child of today who will be rejected in the draft of the next generation. The proper care of all our backward children will add heavy burdens to the backs and brains of our medical inspectors and of the profession in general; but if we ignore them, and shirk our task, we shall only make life harder for the men who follow us.

We are using the adjective "backward" to denote retardation and delinquency of all sorts—physical, mental and moral. Backward children are the laggards in our schools who do not progress at the normal rate but have to go over the same work two, three or more times. In school parlance, they are called "repeaters." They constitute today over 16 per cent of our school population, aggregating six million children, and their slowness causes a waste of school funds amounting to 27 millions of dollars annually. They are dropping out of our schools in spite of our compulsory education laws, at the rate of 50,000 annually. They are the refuse of our educational processes. They are filling our courts and our correctional institutions, involving society in a needless expense of millions of dollars. They are recruiting the ranks of our standing army of dependents, criminals, drug habitues, paupers, and ne'er-do-wells.

It is not the robust and sound young people who fail in life. Doctors V. V. Anderson and Christine Leonard, Medical Directors of the Municipal Court of Boston, in a recently published study of 1000 delinquents seen in court, taken consecutively and not selected—find that "34.2%— one out of every three persons—were in poor or bad health, and in such physical condition as to warrant urgent medical treatment." They add that in a recent study of immoral women made by Dr. Anderson, 44% were in poor or bad physical condition from diseases other than venereal (tuberculosis, asthma, Bright's disease, heart disease, etc.) They conclude from their studies that "The chances for being self-supporting were more than four to one in favor of the individual in good physical condition." (*Boston Medical and Surgical Journal,* June 13, 1918, page 803.)

"The Massachusetts State Commission for the Investigation of the White Slave Traffic, So Called," reported in 1914 that out of 300 prostitutes examined by them, 165—about 55 per cent—were feeble-minded or insane. They do not report the number suffering from physical defects other than venereal disease. They do recognize, however, the partial responsibility of the schools for the existence of immoral traffic. To quote:

"The prostitutes of to-morrow are in our primary schools to-day. The future customers of these prostitutes are to-day innocent boys, with infinite possibilities of good as well as of evil. If our boys and girls are to be given sufficient moral fiber and the self-control to keep straight, certain old-fashioned agencies must assume their proper places. The fate of these boys and girls depends upon the home, the school, the church and the neighborhood—and upon the administration of government by honest and high-minded public officials. Each of these agencies must do its part in the molding and forming of character."

If you accept the mass of expert testimony that I have cited in this paper, you are prepared to admit that there is a great deal of truth in the following statement made at the Fourth International Congress on School Hygiene, held in Buffalo in 1913, by Dr. William M. Richards of New York City:

"William Evers, formerly Guard on Murderers' Row, in the New York City Prison known as the 'Tombs,' and now Chief Guard of the Workhouse on Blackwell's Island, once said to me: 'I have been dealing with criminals for twenty-nine years; perhaps I have seen more murderers than any man in the United States—possibly in the world—and I have never seen a criminal who did not have some physical defect which, in my opinion, was the cause of his being where he was.'"

In considering the subject of this paper, we should bear in mind that while mental defect always connotes backwardness the same is not true of physical defect. We may accept the current estimate that 75 school children out of every 100 "are suffering from some partially or completely remediable defect" which interferes more or less with their progress. Our own experience would place the figures ten or fifteen per cent lower. However, not all of these 60 to 75 children are backward in the accepted sense of the word—only a quarter in fact. The other three-quarters of our physical defectives are able, in spite of their handicap, by dint of effort aided by good teaching, to make a fair success of their school work. Indeed, some children with serious physical defects manage to achieve the highest success in their school and in life, but they are exceptions to the rule. A great deal of the best work in this world is accomplished by plucky people who are sick in the ordinary sense of the word, and this truth applies to children as well as to men and women. A bright mind is not always defeated by an imperfect body.

In dealing with the child whose mind is normal while his body is defective, we should always take courage in the fact that he has three chances of success against one chance of failure in life. His chances are vastly improved also if his defects of body can be removed or lessened.

It would be superfluous to enumerate in this presence the various physical defects found in our school children, or the well-known methods by which these defects are revealed to the examiner. It is hardly necessary to remind you, moreover, that in this State we have had, since 1913, a medical inspection law that is adequate to all the needs of our schools. Any legally qualified physician, with two years of practice, is competent to make the required physical examinations and to recommend treatment for the defects that he discovers. The school nurses who have qualified under this law are proving themselves invaluable assistants in the follow-up work that is so essential for securing the practical benefits of medical inspection. In many of our towns and villages the Chief Medical Inspector, Dr. Howe, has secured the co-operation of surgeons, specialists, general practitioners and dentists, who give a part of their time cheerfully to the treatment of school children referred to them. If all communities were awake to the significance of this service and all medical inspectors were faithful physicians, the State Education Department would have little else to do than to congratulate our citizens on the restoration of our handicapped children.

But it is the purpose of this paper to present these troublesome types of abnormal childhood as problems confronting the *medical* profession in general. The doctor deals with the child long before the schools or the courts know him. The doctor takes rank above the parent, the teacher and the judge in directing the health and habits of the child, and the doctor is logically the first expert who should discover the abnormalities and pernicious influences that make for failure in the child's life. That the doctor often defaults and fails to take advantage of his strategic position, the records of our schools and courts have clearly proven. Although the doctor is eminently fitted by education and experience to act as "guide, philosopher and friend" to his circle of patrons, he often lacks the inclination or the opportunity to study the child as a *social unit,* and to warn its parents of the earliest signs of abnormality in the child's development. In short, the doctor is but the casual adviser of the child, useful in case of accident or disease, while the largest concerns of the child's life are left to the direction of the church, the school and the court.

Fortunately, the exceptions to this rule are becoming more common, and the province of the physician is growing wider.

The time is far past when the doctor should fear the rivalry of the medical inspector of schools. On the contrary, every doctor should look on medical inspection as a factor in strengthening the influence of our profession throughout the community. He should avail himself of the opportunities for increased service which medical school inspection brings to his very door. He should redouble his vigilance in the care of his little patients, from infancy up, in order to leave less for the medical inspector to discover and report later on. If all our medical men would but live up to their opportunities, the medical inspector of schools would be ashamed to scamp his work and draw his pay, as is unfortunately the case in some schools, the perils that menace child life would be minimized and the backward children would move forward in glad response to our thoughtful and hearty service.

Medical Society of the State of New York

The President, Dr. Madill, has appointed Dr. S. S. Goldwater, Medical Director of Mt. Sinai Hospital, a member of the Committee to Study the Subject of Compulsory Health Insurance, with Special Reference to the Medical Profession.

County Societies.

MEDICAL SOCIETY OF THE COUNTY OF ESSEX.

Semi-Annual Meeting, Elizabethtown, N. Y.
Tuesday, June 3, 1919.

The meeting was called to order in the Deer's Head Inn, at 2.45 P. M., by the President, Dr. Thomas J. Cummins.

The following members were present: Drs. Barton, Bond, Breen, Canning, J. P. J. Cummins, T. J. Cummins, Evans, Houghton, Sargent, Saville, Sherman, Turner, and Payne.

Senator M. Y. Ferris of Ticonderoga and Dr. G. G. Marshall of Rutlant, Vt., were present as guests.

The minutes of the last meeting were read and approved.

Dr. John A. Battin, of Elizabethtown, was elected to membership.

The Secretary announced the death of one member since the last meeting, Clarence Sanford Faulkner, M.D., late of Elizabethtown.

The President appointed a committee consisting of Drs. Evans, Payne and J. P. J. Cummins to draft resolutions of regret upon the death of Dr. Faulkner and present same at next meeting.

In the scientific program session Senator M. Y. Ferris of Ticonderoga gave a clear résumé of the bill for Compulsory Health Insurance passed at the last session of the New York State Senate and discussed the bill and the forces which were working at Albany to force this legislation on the State. A rising vote of thanks was tendered Senator Ferris for his valuable presentation of the subject of Health Insurance.

Dr. G. G. Marshall of Rutland, Vt., read a paper on "Some Diseases of the Eye of Interest to the General Practitioner." A vote of thanks was given Dr. Marshall.

Dr. Guy S. Houghton, Delegate to the State Society, presented an account of the meeting of the State Society.

Dr. Thomas J. Cummins reported the recent epidemic of trichinosis at Mineville, N. Y., with clinical notes of one fatal case. Eighteen cases with two deaths.

MEDICAL SOCIETY OF THE COUNTY OF ST. LAWRENCE.

Semi-Annual Meeting, Canton, N. Y.
Tuesday, June 3, 1919.

The meeting of the Society was called to order in the offices of Clayton G. Andrews, M.D., at 8 P. M.

"Some Observations Made During the Recent Epidemic of Acute Respiratory Infections," Daniel M. Taylor, M.D., Edwards, Vice-President of the St. Lawrence County Society.

"Demonstration of the Administration of Salvarsan," J. C. Ayer, M.D., Surgeon to the New York Health Department, New York.

"Mental Mechanism in the Psychoses and Neuroses," P. R. Lehrman, M.D., Ogdensburg.

Books Received.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

Diet in Health and Disease. By Julius Friedenwald, M.D., Professor Gastro-Enterology, University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore; and John Ruhrah, M.D., Professor Diseases Children in the University of Maryland and College of Physicians and Surgeons, Baltimore. Fifth edition, thoroughly revised and enlarged. Octavo, 919 pages. Philadelphia and London: W. B. Saunders Co., 1919. Cloth, $6.

The Higher Aspect of Nursing. By Gertrude Harding. 12mo of 310 pages. Philadelphia and London: W. B. Saunders Co., 1919. Cloth, $2 net.

Training School Methods for Institutional Nurses. By Charlotte A. Aikens, formerly Director Sibley Memorial Hospital, Washington, D. C.; author of "Hospital Management," "Studies in Ethics for Nurses," etc. 12mo, 337 pages. Philadelphia and London: W. B. Saunders Co., 1919. Cloth, $2.25 net.

Reconstruction Therapy. By William R. Dunton, Jr., M.D., Assistant Physician Sheppard and Enoch Pratt Hospital, Towson, Md.; Instructor in Psychiatry, Johns Hopkins University. 12mo of 236 pages, 30 illustrations. Philadelphia and London: W. B. Saunders Co., 1919. Cloth, $1.50 net.

An Outline of Genito-Urinary Surgery. By George G. Smith, M.D., F.A.C.S., Genito-Urinary Surgeon Out-patients, Massachusetts General Hospital; Assistant Visiting Surgeon, Collis P. Huntington Memorial Hospital; Captain Medical Corps, U. S. A.; Member American Association Genito-Urinary Surgeons; and American Urological Association. Authority to publish granted by the Surgeon-General, U. S. A. Illustrations by H. F. Aitken. Published by W. B. Saunders Co., Philadelphia and London, 1919.

The Medical Clinics of North America. Volume II, Number IV (The New York Number, January, 1919). Octavo of 303 pages, with 60 illustrations. Philadelphia and London: W. B. Saunders Co., 1919. Published bi-monthly. Price per year: Paper, $10; cloth, $14.

The Don Quixote of Psychiatry. By Victor Robinson, Ph.C., M.D. Published by the Historico-Medical Press, 206 Broadway, N. Y. City, 1919.

Squibb's Materia Medica, 1919 Edition. Published for the Physican and Surgeon by the Medical Department, E. R. Squibb & Sons, New York.

The Refraction of the Eye. A Manual for Students. By Gustavus Hartridge, F.R.C.S. With 110 illustrations. 16th edition. Published in 1919 by P. Blakiston's Son & Co., Philadelphia. Price, $2.25 net.

War Medicine. Volume II, Nos. 6 and 7. Published monthly by the American Red Cross Society in France for the Medical Officers of the American Expeditionary Forces.

The Medical Clinics of North America, March, 1919. Published Bi-Monthly by W. B. Saunders Co., Philadelphia.

A Laboratory Manual for Elementary Zoology. By L. H. Hyman, Dept. of Zoology, University of Chicago. 1919. University of Chicago Press. Price, $1.50 net.

The Realities of Modern Science. By John Mills. An Introduction for the General Reader. Macmillan Company, New York, Price, $2.50.

The Health Officer. By Frank Overton, M.D., D.P.H., Sanitary Supervisor, N. Y. State Dept. of Health, and Willard J. Denno, M.D., D.P.H., Medical Director of the Standard Oil Company. Octavo of 512 pages, with 51 illustrations. Philadelphia and London: W. B. Saunders Co., 1919. Cloth, $4.50 net.

Book Reviews

The Blind, Their Condition, and the Work Being Done for Them in the United States. By Harry Best, Ph.D., author of "The Deaf." Their Position in Society and the Provision for Their Education in the United States. Published in 1919 by the Macmillan Co. Price, $4.00.

This work of about 750 pages is a broad and comprehensive treatise on blindness, its causes, prevention, and the measures taken for alleviation.

The word "blind," without some qualifying adjective, has hitherto been an indefinite term. However, the author states that recently the definition of blindness as the possession of not more than one-tenth of normal vision is beginning to be adopted in present workingmen's compensation laws, and has been theoretically accepted by the United States Government for persons in military service.

The first five chapters consider the economic status of the blind, the loss to the individual and the expense to the State. Chapters VI to XI, inclusive, treat of the various causes of blindness and the many associations organized to aid in the prevention of blindness. Part III describes the progress made in the education of blind children. Part IV gives an interesting account of the development of raised characters or print, designed to enable the sightless to read. Parts V and VI include information regarding homes, workshops, employment and pensions for the blind.

The author has admirably succeeded in writing a book which will be appreciated, not only by doctors, but by all others who have the welfare of humanity at heart.

J. W. I.

Military Surgery of the Ear, Nose and Throat. By Hanau W. Loeb, M.D., Major Medical Reserve Corps, U.S.A. 16mo of 176 pages. Philadelphia and New York: Lea & Febiger, 1918. Cloth, $1.25 (Medical War Manual No. 8.)

Military Surgery of the Ear, Nose and Throat by Major Hanau W. Loeb, M.D., is one of a series of manuals authorized by the War Department and is intended for the use of the military man at the front. It is a small volume, well bound in leather and can be easily carried in the pocket.

The author has considered only the conditions found in actual warfare, the commoner diseases being omitted. The character, results and treatment of diseases of the ear, nose and throat are given according to the author's view, followed by the views of other men in a review of the literature. Diseased conditions caused by gases used in war, malingering and its detection, the tests used by the aviation service to determine the condition of the inner ear and its associated tracts, the psychoneuroses of hearing and speech, reconstruction and re-education are all briefly considered.

It is a book that is of very little value to the man doing civil practice, except as he may find use for the very complete bibliography covering the period of the world war.

J. W. Durkee.

Colloids in Biology and Medicine. By Prof. H. Bechhold, Member Royal Institute for Experimental Therapeutics, Frankfort A.M. Authorized translation from the second German Edition, with Notes and Emendations by Jesse G. M. Bullowa, A.B., M.D., Assistant Clinical Professor Medicine, Fordham University, New York City. 54 illustrations. D. Van Nostrand Co.: New York City. 1919. Price, $5 net.

Although it is a little over a half century since Graham, an English physicist, published his work on diffusion of solids in solution, and his separation of chemical substances into the two groups of crystalloids and colloids, it is only within a few years that the study of colloids has received any considerable attention. This study has shown that these substances have a very practical interest in the arts and in biology, and a voluminous literature is accumulating. The book before us is the result of "an attempt to apply the results of colloid research to biology." It is therefore a digest of the literature on colloid chemistry bearing on biology and medicine. In order to make the matter intelligible to the biologist or physician, the author has reviewed in Part I the chief established facts of the nature and behavior of colloids. This part of the book, consisting of 125 pages, gives a good idea of what colloids are, and how they behave, and is well worth reading.

In Part II the author discusses the properties of what he terms the bio-colloids; such as the carbohydrates, lipoids, proteins, foods, enzymes, immune bodies and immune reactions.

Part III is devoted to the relation of the body colloid substances to metabolism, growth and development, and the distribution and circulation of materials in the body. Chapters are devoted to the cell, the blood, the movements of the organism, absorption, secretion and excretion, etc.

In Part IV there is discussed from the colloidal viewpoint the action of various substances used as medicines or acting as anæsthetics, disinfectants, or as poisons. The effects of the metallic colloids are discussed at considerable length, and the conclusion is reached that as therapeutic agents their value is doubtful, or the evidence is contradictory. The book closes with a chapter on microscopic technic and the theory of stains and staining.

The impression one gets after reading the book is that it is an interesting digest of the literature and to be recommended to those who wish to become acquainted with the elements of colloid chemistry, but that there is little of practical interest to the physician.

E. H. B.

Human Infection Carriers; Their Significance, Recognition and Management. By Charles E. Simon, B.A., M.D. 12mo of 250 pages. Philadelphia and New York: Lea & Febiger, 1919. Cloth, $2.25.

Dr. Simon in the preface to his book very modestly states that it was written primarily for students of medicine, and hopes it may prove of service to the health officer and to the general practitioner. As a matter of fact, it is an extremely valuable book for all of them, because the discussion of the infections produced by the various organisms correlates the bacteriology, the clinical evidence, and the effect upon human beings grouped in communities or otherwise brought into close contact. The composite picture thus produced enables the general practitioner to appreciate the effect of carriers upon communities, a subject unfortunately neglected by him as a rule, because of his habit of thought in terms of the individual. To those interested in public health, it gives the essential information in one compact volume of 250 pages, which otherwise could be secured only by reference to many books. This is the reason, also, why this text-book is of value to medical students, apart from the community viewpoint which it gives them.

Of particular interest is the chapter on Pneumococcus Pneumonia, especially the portion which discusses the management of the 1, 2, 3 and 4 types of this infection. In view of the recent pandemic of influenza, it seems unfortunate that the results of some of the studies of this outbreak, especially those in the army camps, could not have been included in the chapter on this subject. These studies may modify our views very materially as to the effect produced by the various combinations of bacterial flora as evidenced at different times or at different localities.

The appendix includes a summary of Federal, State and Municipal laws and regulations with respect to carriers, and is a handy reference for health officers.

Alfred E. Shipley.

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ORIGINAL ARTICLES

PHYSIOLOGY AND PATHOLOGY OF THE ENDOMETRIUM.*

By LAWRENCE W. STRONG, M.D.,

NEW YORK CITY.

NO study of the endometrium has been made in the past ten years which has not begun with a reference to the work of Hitschmann and Adler.

Most writers have prefaced their observations with the remark that little has been added to or taken away from this foundation.

The principal points to which attention has been directed are in noting that the histological pictures given of the various phases of the menstrual cycle are perhaps not as rigid as one would infer from the original article.

The most recent comprehensive study of the endometrium appears to be that of Schroeder,[1] in which many additional features of the endometrium are discussed.

The most noticeable advance has certainly been in the correlation of the various stages of the corpus luteum with those of the uterine mucosa.[2] According to Miller, ovulation normally occurs on the nineteenth day of the menstrual cycle, nine days before the onset of menstruation. Frankl puts it one day earlier, while Schroeder makes it from fourteen to sixteen days after the onset of menstruation. The probabilities are that there is normally some variation in ovulation and that it may occur from the sixteenth to the nineteenth day after the onset of menstruation.

The end-result of these studies on the correlation of menstruation and corpus luteum formation is that a fresh corpus luteum is invariably present in the premenstrual stage of the endometrium, and that the condition of the mucosa can be accurately predicted from the corpus luteum and *vice versa.*

The use of the terms proliferative and secretory in place of interval and premenstrual has the advantage of expressing a physiological state and directing attention to the uterine secretions which have recently been the subject of study.

It has always been customary to date a menstrual cycle from the onset of hemorrhage. This is a practical method because it gives an obvious and definite starting point. But from an anatomical standpoint it is obvious that parts of two menstrual cycles are included in one by this method. A menstrual cycle begins with the renovation of the mucosa after menstruation, it proceeds through the growth, to the period of maturity when the mucosa gives forth its characteristic secretions. This lasts until retrogression is marked by the hemorrhage, and the end of the menstrual period is that of the end of hemorrhage when a new mucosa is formed. In the case of pregnancy the secretory period is prolonged until delivery.

Ovulation is referred to the last appearing menstruation in the reckoning of pregnancy, which is a method of convenience, but the ovum in fact is a product of the succeeding menstrual cycle.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 7, 1919.

Physiology.

The specific function of the uterine mucosa is to prepare for the nidation of the ovum and this function is exercised periodically. The physiological secretions of the uterine glands must have a relation to nidation or to menstruation when that occurs.

The glands of the mucosa are of the simple tubular type; the cells are cuboidal or low columnar, an evidence of the simple form of mucous gland. During the secretory stage the nucleus is pressed to the base of the cell, there may be a distinct vacuole in the cytoplasm due to the discharge of mucin. The cytoplasm is not granular as in serous glands and the cell margin may be very irregular from rupture and discharge of the contents. Mucin is found in the lumen of the gland where it may be demonstrated by carmine or thionin stains.

Special staining is not necessary, however, as mucin may be recognized in broad sheets of a bluish tint in hematoxylineosin preparations. It is to be distinguished from serum which is granular and pinkish and from fibrin which stains in pink threads. This is the first and most easily demonstrable of the uterine glandular secretions and is of practical importance because it designates plainly the stage of the menstrual cycle which is present as accurately as the form and appearance of the glands. The uterine mucosa does not normally secrete at all times, but the secretory stage is identical with the premenstrual, and marks the development of the corpus luteum.

Mucus is very scanty or absent in the proliferative stage and steadily increases in amount as the premenstruum advances.

It is abundant during pregnancy. Its function is doubtless that of a lubricant. In dilated and cystic glands of the fundus and in mucocele of the uterus from stenosis of the os, it may be found inspissated in considerable quantity.

A second product of the uterine glands is stated by Ascheim, Driessen and Weyelin[3] to be glycogen. This is not properly a secretion, but is stored up by the growing cells as food reserve, in the form of granules which may be demonstrated by Best's carmine stain. It is said to become very abundant in the premenstruum and in pregnancy and is formed simultaneously with the secretion of mucin. The authors cited regard glycogen as a valuable index of the secretory stage of the uterine mucosa.

In my own experience its demonstration is disappointing. I have not been able to convince myself that the red-staining bodies with Best's carmine were in fact glycogen since they do not disappear after hydrolysis with weak acids. At all events the presence of mucin is sufficient and characteristic evidence of the secretory stage which needs no confirmation.

Frankl and Aschner[4] and Halban and Frankl[5] state that they have demonstrated a tryptic ferment in the secreting stage of the mucosa. Their first work was done upon plates of Loeffler's blood serum which they found were digested by extracts of the uterine mucosa, but since there were technical as well as theoretical faults in their experiments their second work was done with silk peptone. The uterine mucosa was ground and extracted in salt solution over night. The extract was then mixed with a solution of silk peptone and incubated at 37° C. for twenty-four hours, when crystals of tyrosin were demonstrable; this was regarded as proof of tryptic digestion. It does not appear from the descriptions that this work was carried on under bacteria free conditions. I have extracted and digested nine specimens of mucosa in the secreting stage in this manner and although tyrosin crystals were sometimes demonstrable this does not appear to be sufficient proof of the presence of trypsin.

When the extracts were filtered bacteria free no tyrosin appeared. It is necessary also to work with mucosa entirely free from blood on account of the antitryptic action of normal serum. In order to fully demonstrate the presence of a tryptic ferment, it would be necessary to have negative controls, that is to use inactivated (heated) extracts in comparison with the active ones. It is not stated in the articles referred to whether such controls were used.

Frankl explains the desquamation of the mucosa during menstruation as the result of autolysis due to the tryptic ferment. He also states that the incoagulability of the menstrual blood is due to this ferment.

Why the tryptic ferment does not act during pregnancy is not explained by Frankl's theory. It is a misconception to regard menstrual blood as incoagulable. I have demonstrated the presence of active fibrin ferment in it and have shown that it is usually partly coagulated. There seems to be no basis for regarding the decidual reaction as due to a tryptic ferment.

While it is necessary to allude to the cause of menstruation it is beyond the scope of this article to fully discuss the function of the corpus luteum. In brief, Frankl, as a result of destruction of the corpus luteum with the cautery, holds that its secretion causes menstruation. Halban on the contrary regards the lutein hormone as an inhibitor of menstruation. There are various difficulties in the acceptance of either hypothesis.

Meyer[7] and Schroeder[8] both see in the death of the unfertilized ovum a cessation of hormones controlling and protecting the corpus luteum.

The retrogression of the corpus luteum causes the uterine mucosa to miss its functional stimulus and menstruation results. This theory would have more value if it were susceptible of experimental proof. There are certain objections to it as it stands, notably the fact that it necessitates the assumption of a fundamental difference between the mature ovum after follicular rupture and the ovum within the follicle, since during pregnancy ova are constantly dying in the ovary without disturbing the function of the corpus luteum. The theory again depends upon the assumption that the corpus luteum inhibits menstruation. This is not definitely established although perhaps the weight of evidence is in this direction.

It has generally been held that the corpus luteum controlled the early stages of pregnancy and that its removal during the first month would inevitably result in abortion. That this is not necessarily true has been proved in three cases at the Woman's Hospital where the removal of a corpus luteum verum during the second month has not interrupted the pregnancy. This is evidence against the inhibitory activity of the corpus luteum. Still in pregnancy all lutein tissue undergoes hypertrophy and the function of the corpus luteum verum may have been supplied by older bodies in these cases.

The relationships between the sexual gland hormones and the other accessory glands of internal secretion are too complex for any simple explanation of the menstrual function.

HISTOLOGY.

Variations occur both in size and form of the uterine glands and the relative proportion of the stroma. If the stroma is scanty the wall of the gland will buckle as it grows in length thus producing the serrated form characteristic of the premenstruum. This may be absent when the stroma is abundant so that it is not diagnostic of the secretory stage.

The gland may be dilated from accumulated secretion if its lumen is obstructed. Thus are produced variations in size and small cysts which are not to be looked upon as pathognomonic of any specific condition. The number of glands is absolutely dependent upon the number in the basal layer, and these do not increase with the growth of the functional layer. This controverts the old idea of glandular endometritis. Invaginations and glomeruli are certainly artefacts seen only in curettings and due to the contraction of the gland when the support of the stroma is withdrawn.

There are sometimes seen apparent mixtures of the glands in different phases of the menstrual cycle and these have been held to be diagnostic of uterine hemorrhage. These are in reality artefacts due to the curette, the basal layer being mixed with the functional. No mucosas from uteri removed by hysterectomy show mixtures of the proliferating and secretory stages. Leukocytes emigrate in the secretory stage and are most abundant during menstruation. Unless they are focal in minute abscesses they are not pathological.

Round cells and plasma cells are also seen in normal mucosas, but when they are abundant and in local areas they denote inflammation. The uterine mucosa is composed of two layers, a narrow basal layer which is not cast off during menstruation and where the glands take origin, and a functional zone which composes the greater portion. The functional zone shows in the secretory stage a suggestion of the two divisions characteristic of pregnancy, the inner spongy and the outer compact. So the stroma makes a decidual reaction in the secretory stage, its absence does not necessarily mean the absence of the premenstrual stage, since the reaction is not always conspicuous. Nor should the presence of areas of stroma without glands be regarded as pathological. Schroeder states that such appearances are artefacts due to curetting. I possess, however, specimens after hysterectomy which show broad areas of stroma without glands. These are in mucosas which show beginning atrophy or areas of atrophy adjacent to the glandless areas.

One of the most significant observations made in recent years on the physiology of the endometrium is that of Schroeder and others who state that there is complete destruction of the functional layer normally at menstruation. Schroeder bases his opinion upon eighty-one cases reported in the *Monatschrift f. Geburtshülfe und Gynaekologie* in 1914.

The material from which such observations may be drawn must be carefully selected from hysterectomies upon patients having a normal menstrual history, who were operated upon directly after a menstrual period. It has not been my fortune to see many such endometria. The significance of the finding lies in the bearing it has upon pathological processes occurring in the mucosa. If there is complete destruction down to the basal layer every twenty-eight days it is plain that the mucosa can exhibit none of the characteristic alterations that denote chronic inflammation. Thus it cannot show cicatrization due to fibroblastic deposition of connective-tissue fibrils and elastic fibrils.

According to the complete desquamation during menstruation theory there can only be an acute or recurring endometritis, a chronic inflammation is only possible in the basal layer. No scar can occur in the functional layer, no connective-tissue production and induration can be demonstrable.

Also in the basalis the repair changes must be of a special type and produce no actual scar due to the extraordinary regenerative activity.

It is impossible to controvert the evidence supplied by the large number of cases collected by Schroeder, and yet the mucosas continually seen in patients who have been menstruating from one to several days gives no evidence of such complete destruction. The common finding is a persistence of the functional layer in the secretory stage. The superficial epithelium is often still demonstrable and there is no evidence of autolysis.

Many mucosas also give evidence of fibroblastic change in the stroma and slight but demonstrable cicatrization, showing that a chronic reaction is possible.

Robert Meyer states correctly that there are certainly some menstruations without complete desquamation.

Regeneration of the surface epithelium is said to occur on the third and fourth day after the cessation of menstruation. In the earliest postmenstrual mucosa which I have been able to observe, removed by hysterectomy on the third day, the superficial epithelium is present and covers a narrow zone of the functional layer which is still in the secreting stage.

PATHOLOGY.

The signs of inflammation in the mucosa uteri are masked in this regard, namely that exudates of leukocytes, round and plasma cells are all to a certain extent physiological. In the last days of the secretory period there is an outpouring of polynuclear cells probably hastening the destruction and absorption of the mucosa at menstruation. Lymphoid cells are diffusely scattered in the normal stroma and form small lymphoid aggregations at all stages of the menstrual cycle. Plasma cells, when abundant, are certainly an aid in the diagnosis of inflammation, but they are not to be regarded as diagnostic of a specific type, as gonorrhea, contrary to the statement of some writers. Where there are definite collections of pus cells or round cells, inflammation may be determined, and hemorrhage, fibrin and necrosis, or a granulation membrane are the more outspoken marks of intensity. Tubercular endometritis presents no especial feature differing from tuberculosis elsewhere.

Endometritis then shows only the same exudative, destructive or reparative processes which are characteristic of inflammation in general, and it is only when these are present that the diagnosis of endometritis should be made.

All the glandular variations and stromal changes formerly described as endometritis are now recognized as cyclic changes. A corollary of this description of endometritis is that it is practically always bacterial in origin. So it is chiefly puerperal and gonorrheal. In the severe grades there may be pseudomembranes and casts of the mucosa may be thrown off, similar to the so-called membrana dysmenorrhoica associated with dysmenorrhea.

Since endometritis means merely an inflammation of the uterine mucosa and since the chief changes occur in the stroma the term "interstitial" is tautological and out of place. Etiologically endometritis may be divided into bacterial and toxic and mechanical and thermal. All these produce identical appearances varying only in degree.

Endometritis is not usually diffuse, except in the most severe cases which are puerperal. In the form most commonly seen, associated with inflammatory adnexal disease, and which is presumably gonorrheal, it is focal and considerable areas occur without inflammatory reaction.

The distinction between acute and chronic forms of endometritis from a histological point of view depends upon the different elements of the exudate and the effect of a chronic irritant upon the fixed elements of the tissue.

The characteristic cell of chronic inflammation is the lymphocyte and the tissue reaction is that of scar formation, the production of fibroblasts and the deposition of elastic fibrils.

These distinctions are not marked in the endometrium where lymphocytes are present to some degree in all stages, and the fibroblastic change may be seen in many cases of endometritis postabortum, which certainly cannot be called chronic.

No practical advantage is attained by making the distinction thus vaguely indicated and it seems better to avoid controversy by not using the term chronic.

Hyperplasia.—This is the simplest and commonest expression of nonspecific pathological change which occurs in the endometrium.

The stimuli which produce inflammation may cause this proliferative change, but it is not necessarily associated with inflammation and does not show the inflammatory exudate in itself.

Hyperplasia shows itself as an exaggeration of the normal, and it may be said that the end of the proliferative stage passes insensibly into hyperplasia. It can hardly be maintained, however, as Schroeder attempts to do, that hyperplasia always limits itself to the proliferative stage and that the secretory hyperplasias are physiological.

This theory states that hyperplasia is due to follicular atresia, the death of the ovum resulting in the persistence of the Graafian follicle which may be developed into a small cyst, the persistence of which stimulates the uterine mucosa to proliferate. Thus hyperplasia is always in the proliferative stage and the secretory is held in abeyance, no corpora lutea being formed. This would limit hyperplasia to nonmenstruating uteri. It is peculiar that death of the ovum outside the ovary should cause destruction of the mucosa and death inside should cause hyperplasia of the same, as would be the case in Schroeder's hypothesis.

Ova are dying all the time in the ovary before puberty without the production of hyperplasia, nor are the small cystic degenerations of the ovary always associated with hyperplastic mucosas. Hyperplasia does not interrupt the cyclic development of the uterine mucosa, in other words one does not find hyperplastic mucosa with no signs of the secretory stage in the premenstrual period.

The basal layer of the mucosa exhibits hyperplasia as well as the functional layer, which is plainly seen in the irregular size of the glands and their penetration into the myometrium.

As far as histological appearance goes hyperplasia passes without definite boundary line into the picture of adenoma, that is, into autonomous tumor growth.

Schroeder states that there is no such thing as a local (polypoid) hyperplasia but that all such bodies are autonomous and true adenomata. There is, however, no criterion which will separate the tissue overgrowth from the autonomous tumor and many of the broad based polypi seen in the neighborhood of submucous myomata give no histological justification for the assumption that they are adenomata.

There is no difficulty in recognizing an outspoken adenoma but the changes which separate it from simple hyperplasia are all relative and not absolute. In the same way the histological picture of hyperplasia is insensibly merged into carcinoma and there is a stage which may be called precancerous, when it is impossible to separate the two.

The concept must be made that the histological appearance is the reaction of the uterine mucosa to certain stimuli and that this reaction may be the same though the stimuli may widely differ. Thus hyperplasia is the first manifestation of a reaction which may be slight so that the process stops with hyperplasia or it may be profound when a carcinoma will ultimately be produced.

Hypoplasia.—This is a condition of infantilism not often encountered by the pathologist in a form satisfactory for study, since the state does not call for hysterectomy. Clinically it is manifested by dysmenorrhea in young women. The curettings show glands in the early stage of proliferation and the diagnosis is inferred from the clinical history.

Atrophy.—This may be local or general, the glands disappear more easily than the stroma; it is characteristic of the glands to take an oblique course or run parallel to the surface. The secretory stage is absent in the glands which are irregular or dilated. This is simple regression and presents no features of especial interest.

Metaplasia is manifested in the endometrium not as a general process but only in its especial effects on epithelium or stroma, particularly in the development of neoplasms. It therefore need not concern us further. Neoplasms will not be discussed since their relations to the endometrium are not specific.

Adenomyoma and adenomyometritis are outside the scope of this paper since they are not properly of the endometrium.

The two important pathological conditions of the endometrium, apart from neoplasms, are therefore inflammation and hyperplasia.

Although they are closely related, it is better to separate them and to use the term endometritis for the conditions showing exudative processes, since simple hyperplasia shows no signs of exudation.

It remains to coördinate the physiological, histological and pathological data in their relationships to each other.

The physiological data concern the secretions, the histological are the cyclic changes and the pathological are endometritis and hyperplasia.

The secretions and the cyclic changes are definitely to be related to each other, the secretions being the product of the mucosal development. There is practically no secretion during the proliferative phase, and the premenstrual stage may well be termed the secretory. So secretory and cyclic changes may be considered together with reference to pathological change.

The general conclusion from the examination of many curettings examined at the Woman's Hospital in the past six years from all types of conditions indiscriminately received, is that the uterine mucosa is very resistant to pathological change.

All other recent writers make the same statement, which is a marked contrast to the idea which formerly prevailed, that very slight irritants produced changes in the endometrium.

THE EFFECT OF INFLAMMATION (ENDOMETRITIS) UPON THE NORMAL HISTOLOGICAL CHANGES OF THE MENSTRUAL CYCLE.

The material on which observations were made consisted of all the cases of simple uncomplicated endometritis, exclusive of those following abortion, which were met with at the Woman's Hospital in the past year. There were thirty such cases, which is too small a series to exclude the effects of a chance selection, but since the findings were uniform and correspond to other series which have been reported they are submitted. In no case did the endometritis produce alterations in the glands or the stroma such as to make the cyclic phase unrecognizable. There were no alterations in the number or the size of the glands or their outlines which were traceable to the inflammatory exudate. The stroma indeed was sometimes fibroblastic, but that also occurs without the presence of inflammation.

These thirty cases were examined for clinical evidences of disturbance of menstrual function, hemorrhage and irregularity of the periods, to see how far these were referable to the uterine inflammation.

The histories, however, showed that eleven of them gave some evidence of salpingitis, or adnexal disease and that curettings only had been sent to the laboratory. Five others were in reality postabortive, though the curetting gave no evidence of placental tissue. Of the remaining sixteen, nine showed metrorrhagia or menorrhagia or irregularity while seven were regular but suffered from dysmenorrhea. It appears from these figures that simple uncomplicated endometritis is seldom encountered, and it cannot be a frequent cause of the common disorders of menstruation. Even in such of our cases as had a history of hemorrhage or irregularity it was not plain that the two were related since the clinical symptoms were stated to be habitual while the endometritis was acute.

Endometritis postabortum is much more frequently encountered at the Woman's Hospital, eighty-four cases having been examined in the laboratory in the past year. Of these all gave clinical evidence of hemorrhage or vaginal discharge. These cannot be included as disturbances of normal menstruation.

THE INFLUENCE OF SALPINGITIS, ACUTE AND CHRONIC, AND OTHER ADNEXAL INFLAMMATIONS UPON THE ENDOMETRIUM.

Out of a total of fifty cases of salpingitis where the uterine mucosa was also available for examination, sixteen, or about thirty per cent., showed an endometritis of greater or less degree.

As was to be expected the mild and chronic cases showed endometritis less commonly. None of the fifty cases produced any change in the histology of the menstrual cycle so that the phase was not recognizable. This corresponds to the finding in the case of endometritis. The histories of these fifty cases showed invariably some menstrual disturbance, chiefly hemorrhage and rarely amenorrhea. From a practical standpoint the conclusion may be drawn that the cause of irregularities and hemorrhage is much more frequently adnexal disease than endometritis.

Endometritis when it does occur may or may not be accompanied by hemorrhage and irregularity as the histories of these cases show. It is generally recognized that there is no characteristic local anatomical basis for uterine hemorrhage. Atypical menstruations are to be referred to changes in the endocrine system rather than the endometrium.

HYPERPLASIA IN REFERENCE TO THE MENSTRUAL CYCLE.

As already stated Schroeder holds that hyperplasia does alter the menstrual cycle, advancing the theory that it is due to follicular atresia and stating that the conditions met with in the premenstrual stage are physiological.

It is impossible to place artificial limits for the normal and abnormal variations in the thickness of the uterine mucosa, and a normal premenstrual increase may lead to false conclusions of hyperplasia. The demonstrable occurrence of a secretory stage in such undoubted hyperplasias as are seen in adenomatoid polyps, however, puts beyond a doubt that hyperplasia extends into the secretory stage. The conclusion may therefore be made that hyperplasia also has little effect upon the histology of the normal menstrual cycle.

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Discussion.

DR. THOMAS S. CULLEN, Baltimore, Md.: I was much interested to hear what Dr. Strong had to say about endometritis and our experience in a large measure tallies with his. At the meeting of the Medical and Chirurgical Faculty of Maryland in 1898, I read a paper on Endometritis and briefly outlined our findings in the Gynecological Department of the Johns Hopkins Hospital. I pointed out the fact that endometritis is not common. Every piece of tissue removed in the operating room was examined microscopically and in the space of four years we found only forty-eight cases of endometritis, an average of only one case each month. Even where pus tubes existed the uterine mucosa was usually normal. Where the Fallopian tubes had become infected the fimbriated ends were soon occluded and pus would accumulate in the tube. The infection of the endometrium, on the other hand, would rapidly diminish, undoubtedly due to the excellent drainage afforded by the relatively perpendicular position of the uterine cavity and to nature's "bier" treatment which occurred at each menstrual period. I was amazed to find that real endometritis was relatively rare.

Hyperplasia of the endometrium is a definite clinical entity. I referred to several cases of this character in my cancer book in 1900 and in the adenomyoma book published in 1908. In cases of hyperplasia some of the glands are small, others very large and dilated. This dilatation is evidently not due to obstruction because the gland epithelium is thicker than normal instead of thinned out, as occurs where dilatation is due to obstruction. The stroma of the mucosa contains many more cells than usual and one often finds nuclear figures in the stroma cells. We have a definite increase not only in the glandular epithelium but also in the stroma cells. I did not know just what name to apply to this condition and after talking the matter over with Dr. William H. Welch he suggested the name of hyperplasia as the most appropriate.

This pathological condition is invariably accompanied by an excessive and prolonged menstrual flow. It is usually noted during the child-bearing period. I have occasionally seen it in young girls. One of my patients was only fifteen years of age. Her bleeding had been so free that her haemoglobin was only 30 per cent.

Some patients are relieved after four or five curettements, extending over a period of a year or two. In others hysterectomy may be necessary or the bleeding may be controlled by radium if the patient is near the menopause.

Dr. Broad's case will, I think, prove to be one of adenomyoma of the round ligament, as he surmises. I should very much like to see a section of the nodule.

In answer to Dr. Strong's question as to what causes adenomyoma, I must say that I do not know. We rarely, however, find any evidence of what we usually call inflammation, and I feel that inflammation plays little if any role in the development of these adenomyomata.

One can readily see how the diffuse adenomyoma of the uterine wall may develop. For some reason the inner muscular walls of the uterus undergo a diffuse myomatous thickening and instead of the compact muscular wall we now have one containing large and small chinks, and the uterine mucosa flows in and fills these chinks. The presence of adenomyoma in the round ligament, utero-ovarian ligament, utero-sacral ligament, recto-vaginal septum and at the umbilicus and the existence of uterine mucosa in the ovary must, I think, be attributed to an embryonic displacement of the mucosa.

Dr. Taylor* has struck the key-note when he says that education of the public is the essential factor if we are to save the maximum number of cancer patients. I was especially interested in his use of radium prior to doing a hysterectomy. There is much encouragement in the fact that we are gradually curing more and more cancer cases. In my last group of abdominal hysterectomies for cancer of the cervix, twenty-six per cent. were well after five years. That naturally leaves much to be desired, but is infinitely better than we dared hope for twenty-five years ago.

Dr. Clark's* use of radium in cancer of the uterus certainly has relieved many patients, some temporarily, others permanently. I know of no one, either here or abroad, who had a larger share in the development of the radical operation for cancer than did Dr. Clark, and any statement as to the value of radium coming from him carries great weight.

As pointed out by Dr. Clark, Dr. Howard A. Kelly is certainly coming in for his well merited credit in his strong advocacy of the use of radium in cancer. It was only a few years ago that he was mercilessly criticized for what he said radium could do and did. It is a pleasure to see many of his former critics now staunch advocates of radium. It is the same old story, the pioneer in any given line is the one who always has the hardest row to hoe.

Dr. King suggests that the small chocolate-colored cysts frequently noted in one or both ovaries are probably due to uterine mucosa in the ovary. They are invariably corpus luteum cysts. They are lined by lutean cells and are filled with blood. Uterine mucosa in the ovary is of rare occurrence.

THE DISTRIBUTION OF ADENOMYOMATA CONTAINING UTERINE MUCOSA.*

By THOMAS S. CULLEN, M.D.,
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ON this occasion it is not my intention to delve deeply into the pathology of adenomyomata or to discuss at length their causation, but merely to give a bird's eye picture of this characteristic tumor and to describe briefly its distribution and the clinical picture noted in the various localities in which it occurs.

The adenomyomata under consideration consist of a matrix of non-striped muscle and fibrous tissue. Sometimes the fibrous tissue predominates, whereas in other tumors the muscular elements are more abundant. Scattered throughout this matrix or ground-work are isolated glands or groups of glands sometimes lying in direct contact with the muscle but usually in a characteristic stroma. The glands resemble in every particular those found in the mucosa lining of the body of the uterus. In short, the adenomyoma resembles a diffuse myoma with islands of uterine mucosa scattered throughout it.

ADENOMYOMATA OF THE BODY OF THE UTERUS.

These may be limited to the anterior or posterior walls of the uterus or form a mantle or zone just outside the uterine mucosa. When the uterus is cut open, it is noted that the anterior or posterior wall or both are thickened. This increase in thickness is due to a coarse striated condition of the muscle directly beneath the uterine mucosa. Where the uterine walls are especially thick the diffuse myomatous growth may be several centimeters in thickness. Scattered throughout the diffuse growth one often notes small cyst-like spaces filled with chocolate-colored contents and not infrequently one can with a loup here and there detect uterine mucosa penetrating into the diffuse growth. Occasionally a cyst-like space, 1 cm. or more in diameter, may be found in the thickened uterine wall. Such a space will be lined with a velvety membrane 1 mm. thick and the cavity will be found filled with the characteristic chocolate-colored contents—old menstrual blood.

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* Papers by Drs. Clark and Taylor will be published in a later issue of the JOURNAL.

* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 7, 1919, as an introduction to a lantern demonstration.

The line of demarcation between the normal outer uterine muscular wall and the diffuse myomatous growth just beneath the mucosa is invariably sharply defined, but the two are nevertheless so closely blended that it would be absolutely impossible to separate them. Occasionally such a uterus will contain one or more small discrete myomata.

The histological picture in a typical case is very characteristic: the uterine mucosa is often of the normal thickness and looks perfectly natural, but as we approach the underlying diffuse myomatous tissue, the mucosa is seen to penetrate it in all directions, sometimes as an individual gland, but often large areas of mucosa are seen extending into the depth. In favorable sections one can follow a prolongation of the mucosa halfway through the uterus. Where the diffuse myomatous growth ends, the outward extension of the glands also ends.

In the course of time portions of the diffuse adenomyoma may project into the uterine cavity and be expelled through the cervix as submucous adenomyomata. In other instances a portion of the growth is forced to the outer or peritoneal surface forming a subperitoneal adenomyoma. Such a myoma is prone to become cystic and the cyst cavity or cavities will be filled with chocolate-colored contents.

Symptomatology.—It is not difficult to figure out to what symptoms an adenomyoma of the uterus will usually give rise. In the first place, the mucosa lining the uterine cavity is perfectly normal, hence, as a rule, we shall have no intermenstrual discharge. With the advent of the menstrual period, however, the patient will not only lose her normal quota of blood, but this will be greatly increased by the flow coming from the large areas of mucosa which are scattered throughout the diffuse myomatous growth.

There will, as a rule, be a great deal of pain in the uterus due primarily to the swelling of the mucosa which is scattered throughout the uterine walls. The small and medium-sized cystic spaces filled with chocolate-colored fluid are due to the accumulation of old menstrual blood in areas where the continuity of the mucosa with the uterine cavity has been interrupted. Such areas also undoubtedly add to the feeling of distention and discomfort at the period.

On bimanual examination we find a uterus that may be normal in size and perfectly smooth, or on the other hand, it may be two or more times its normal size and slightly nodular. The introduction of a uterine sound usually shows a normal cavity and on curettage normal mucosa is invariably found.

From the clinical findings one can often make a fairly accurate diagnosis of adenomyoma.

Removal of such a uterus is usually clearly indicated. Frequently this proves rather difficult on account of the tendency for such an organ to become densely adherent to surrounding structures.

Adenomyoma of the Uterine Horn.

In addition to the diffuse adenomyomata of the uterus one finds another variety of adenomyomata in this organ. These are the small adenomyomatous nodules noted in one or both uterine horns. They vary from a few millimeters to about 2 cm. in size and are often associated with an old inflammatory process in the tubes. These growths usually contain many isolated glands embedded in nonstriped muscle and inflammatory tissue. The glands usually lie in direct contact with the muscle and are devoid of the characteristic stroma. Adenomyoma of the uterine horn can hardly be looked upon as a distinct clinical entity but rather I think as part of the end-results of a mild inflammatory process.

Adenomyoma of the Round Ligament.

In 1896 it fell to my lot to record the first growth of this character. Since then quite a number have been noted. Somewhere along the course of the round ligament, usually near the external ring a nodule one or more centimeters in diameter is detected. On going carefully into the history it will be noted that this growth swells perceptibly at the period. One patient was sent to me on the assumption that a hernia existed, but even in this case in the history it was recorded that the swelling was more painful and more prominent at the period.

With the gradual increase in size of the nodule, it may become intimately blended with the fascia. In my second case the diagnosis was easily confirmed at operation, even before any microscopical examination had been made. The surrounding fascia had imbibed a large amount of golden yellow pigment—the remnant of old menstrual blood.

Some of these growths can be removed very readily, others, however, in time may become so intimately blended with the surrounding structures that they must be literally cut away. On histological examination they are found to be made up of nonstriped muscle, fibrous tissue and the characteristic uterine glands. Strands of fibrous tissue and nonstriped muscle spread out into the surrounding adipose tissue.

Adenomyoma of the Utero-Ovarian Ligament.

These are naturally of little clinical significance and will only be recognized in the laboratory. I have reported one case. A multinodular myomatous uterus was removed and springing from the utero-ovarian ligament was a myoma several centimeters in diameter. In the center of this were islands of typical uterine mucosa.

Adenomyoma of the Uterosacral Ligament.

I know of only one case of this character. My colleague, Dr. W. W. Russell, removed a pea-sized nodule from the uterosacral ligament. On histological examination it presented the typical adenomyomatous picture. Since then I have seen a cyst 1.5 cm. in diameter, apparently springing from the right uterosacral ligament. It contained yellowish brown, putty-like material. It may belong to this group but of this I cannot speak with certainty, as the histological picture was not very definite.

Adenomyoma of the Rectovaginal Septum.

I wish to lay unusual emphasis on this group of cases. Many of you have undoubtedly seen them but may not have recognized them. They are of unusual importance and, if overlooked, will in time cause the patient to become a chronic invalid, and in some instances will undoubtedly lead to her death.

In 1913, Dr. D. S. D. Jessup, one of your own members, knowing my interest in adenomyomata, sent me specimens of two tumors of this class. The mail on the following morning brought me the Proceedings of the Royal Society with Cuthbert Lockyer's splendid article on "Adenomyoma of the Rectovaginal Septum." These two communications set me thinking and I at once felt sure that two of my cases undoubtedly belonged in this category, although the histological examination had given no inkling of such a condition. I had many more sections made and was finally rewarded by finding in each case the typical picture in other portions of the specimen. Since then I have been on the lookout for this condition and have had in all fifteen cases.

Adenomyoma of the rectovaginal septum usually starts just behind the cervix, and on bimanual examination one can feel in this region a small, somewhat movable nodule scarcely over a centimeter in diameter. The rectal mucosa at this time can be made to slide perfectly over the tumor.

As the growth increases in size, it spreads out laterally and at the same time becomes blended with the adjacent anterior rectal wall. Later it may invade the broad ligaments, encircling the ureters, or may envelop pelvic nerves. With the extension of the growth it may push down into the posterior vaginal vault, forming definite and well formed vaginal polypi, and finally, it may break into the vagina.

The histological picture is typical of adenomyoma; even the vaginal polypi consist of nonstriped muscle and uterine mucosa covered over by vaginal mucosa. Where the growth has definitely broken through into the vagina, we have normal-appearing uterine mucosa lining portions of the vaginal vault.

The clinical picture in adenomyoma of the rectovaginal septum is typical. In the early stages the patient comes complaining of much pain just before and at the beginning of the period, especially at the time of defecation. On bimanual examination a small nodule is felt directly behind the cervix.

When the process is more advanced, the growth may measure 2 or 3 cm. across and may bulge slightly into the rectum, while in some cases there is already marked thickening of the anterior rectal wall for a distance of several centimeters, and at the period there may be some rectal bleeding.

The growth sometimes encircles one or both ureters. At the period the tumor tissue naturally swells up and it may so constrict one or both ureters that there is a damming back on one or both kidneys with consequent pain in the renal region. In other cases when the pelvic nerves are caught in the growth, excruciating pelvic pain may be experienced as soon as the tumor becomes congested at the time of menstruation.

Occasionally, as the growth progresses, the polypoid condition in the vaginal vault directly behind the cervix becomes very prominent, and in those cases in which the growth breaks through the vaginal mucosa there may be a menstrual flow from the vaginal vault even when a supravaginal hysterectomy has been done some years before for uterine myomata. Finally, if nothing is done, the pelvis may become so choked with the growth that the patient dies from the extreme loss of blood coupled with partial intestinal obstruction.

In the early stages of the growth this condition should be readily diagnosed. It cannot at this time be confused with any other pelvic lesion.

Treatment.—In the very early stages it may be possible to open up the vaginal vault just behind the cervix and remove the tumor. As a rule, however, it involves the posterior part of the cervix and cannot be shelled out.

Where the nodule is 1 cm. or more in diameter and is still freely movable, the abdomen should be opened, the ureters isolated and the uterus with a cuff of vaginal mucosa removed. If the vagina is cut completely across, one can then lift the uterus and vaginal cuff up and with more ease separate the adherent vaginal cuff from the rectum. Sometimes it will be necessary to remove a wedge of the adherent anterior rectal wall with the uterus.

In cases in which the growth is widespread, a preliminary permanent colostomy is imperative. Later the pelvic structures can be removed *en bloc*. The removal of an extensive adenomyoma of the rectovaginal septum is infinitely more difficult than a hysterectomy carcinoma of the cervix.

When a hysterectomy is done and a small portion of the growth has been left on the rectum radium seems to have held the rectal growth in check.

Uterine Mucosa in the Ovary.

In 1898 my colleague, Dr. W. W. Russell, reported a case in which the ovary, although showing but little increase in size, contained large islands of uterine mucosa.

Within the last year Dr. Charles Norris of Philadelphia sent me a section of a relatively small ovary with islands of perfectly normal mucosa scattered throughout it. Recently I examined a small cyst of the ovary filled with chocolate-colored contents and lined with uterine mucosa.

Dr. DeWitt B. Casler of our department is preparing for publication a unique case which has a definite bearing on this subject. The patient, a trained nurse, thirty-eight years of age, had had excessive periods for one year. On examination the uterus was about three times the natural size. Hysterectomy was performed. The increase in the size of the uterus was due to a diffuse myomatous thickening and scattered throughout this diffuse growth were quantities of stroma identical with that of the uterine mucosa. This stroma, however, contained no glands. The tumor resembled in every particular the picture of an ordinary adenomyoma of the uterus save for the fact that the glands were missing in the stroma.

This patient, after her complete hysterectomy, still continued to menstruate regularly through the vaginal vault. A vaginal examination about three and a half years after the hysterectomy showed that the ovary which had been left was perfectly normal in size. A little later it commenced to grow larger and when the abdomen was opened, four years after the hysterectomy, this ovary was as large as a grapefruit.

On histological examination great quantities of typical uterine mucosa were found scattered throughout the ovarian tumor, thus clearly explaining why the patient has continued to menstruate without any uterus—the ovary contained all the essential elements, normal ova, and practically normal uterine mucosa, and the small tract left where the uterus had been removed supplied the necessary avenue along which the menstrual flow could escape.

In due time a sufficient number of such cases will undoubtedly be reported and then we shall be able to give a composite picture of both the clinical course and of the histological changes that occur in this most unusual group of cases.

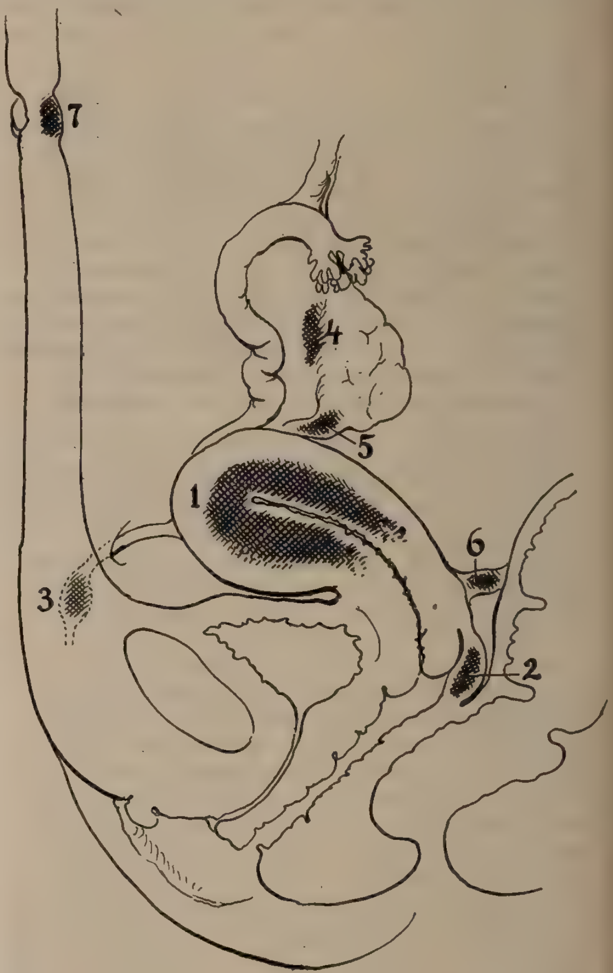

Fig. 1.—The abnormal distribution of uterine mucosa. 1. In the wall of the uterus and at the uterine horn. 2. In the rectovaginal septum. 3. In the ligament. 4. In the ovary. 5. In the utero-ovarian ligament. 6. In the utero-sacral ligament. 7. At the umbilicus. The uterine glands with their stroma are usually embedded in nonstriped muscle and fibrous tissue.

ADENOMYOMA OF THE UMBILICUS.

From time to time a small thickening has been noted at the umbilicus in women during the child-bearing period. In some of these cases the tumor has increased in size perceptibly at the menstrual period and in a few there has been a discharge of blood from the umbilicus at the period. Occasionally small bluish black cysts have been noted in the tumor.

Adenomyomata of the umbilicus are always small. On histological examination they are found covered over with normal skin. They consist of fibrous tissue and nonstriped muscle and scattered throughout this are islands of typical uterine mucosa. Where the history is characteristic, the diagnosis can be made with ease.

It is not necessary for me to discuss this subject in detail, as I have devoted an entire chapter to adenomyomata of this region in my book on the umbilicus.

Removal of the umbilicus is all that is essential in these cases.

From the foregoing we have seen that adenomyomata consisting of a matrix, of nonstriped muscle and fibrous tissue with typical uterine mucosa scattered throughout it are to be found in the uterus, round ligaments, utero-ovarian ligaments, utero-sacral ligaments, rectovaginal septum and umbilicus, and that we occasionally find large quantities of normal uterine mucosa in the ovary.

Adenomyomata form one of the most interesting groups of tumors that we have to deal with in the female pelvis.

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OBSTETRIC SURGERY.*

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THE obstetrician, in his efforts to save life and preserve health, is contending against some of the most important enemies which confront the surgeon. Hemorrhage, shock and infection equally threaten the surgeon and obstetrician. Parturition so frequently causes wounds that the repair of such injuries introduces an element of surgical closure. It is natural that much of obstretrics should be obstetric surgery.

As greater change has taken place in obstetrics in recent years than in any other branch of medicine, so obstetric surgery has widened its scope from a few emergency operations to several well-defined and important surgical procedures. It would be superfluous to give in detail the many surgical procedures which comprise the greater part of obstetric practice, but may I bring to your attention the surgical aspects of some obstetric procedures.

The immediate closure of lacerations of the genital tract occurring during labor has long been considered an obstetric procedure, but that this may successfully be done, the obstetrician must do more than simply bring together an open tear in the perineum. If his patient is to make a complete recovery the cervix, the anterior and posterior segments of the pelvic floor and the perineum must all be examined and if torn be repaired. This requires a knowledge of the anatomy of the parts as thorough as that which makes possible the successful work of a surgeon in operating for hernia.

The most frequent of obstetric operations is delivery by forceps. Yet the introduction of any foreign body within the uterus, even though it pass no further than the cervix or though forceps be only used in the vagina, exposes a patient to the risk of infection, while anesthesia and manipulation give rise to the danger of relaxation of the uterus and hemorrhage. In many cases the forceps must be used when considerable laceration is unavoidable and hence the termination of labor by this means leaves the patient more or less injured. No forceps operation can be thoroughly done which is not conducted on surgical principles and which does not take cognizance of the possible occurrence of hemorrhage and septic infection, and take measures to prevent them.

To bring this to a concrete example, indications arise which justify the delivery of a child by forceps, when the head is upon the pelvic floor but has not rotated, and when a considerable portion of the cervix is still over the head, under these conditions forceps must be intro-

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 8, 1919.

duced within the cervix, the tips of the blades extending into the lower segment. The head must be drawn through the cervix and rotated upon the pelvic floor and then delivered and invasion of the uterus and laceration of the genital tract are inevitable. Or the case may not be suitable for forceps and the physician must deliver by introducing the hand and arm within the uterus and by the performance of version followed by extraction, the same risk of infection and laceration is present. Shall the obstetrician content himself under these circumstances with extracting the child and closure of open lacerations of the perineum, or shall he investigate the condition of the birth canal and close all lacerations and take additional precaution against hemorrhage and infection? The development of obstetric surgery at the present day indicates that the latter is his duty. How may this be done? Under competent anesthesia delivery is accomplished; following this a reasonable time is given for the closing of the sinuses in the uterine wall and then the placenta is expressed by Credé's method or removed manually. The patient is kept under the anesthetic following the removal of the placenta, membranes, cord and blood clots, the uterus is irrigated with one per cent. lysol or weak iodine solution or salt solution, it is then firmly packed with ten per cent. iodoform gauze. This is done not only as a precaution against septic infection but to secure prompt and lasting uterine contraction and thorough drainage of the lochia. The cervix is then drawn down to the vulva and examined and cervical lacerations are closed; lacerations of the posterior segment of the pelvic floor are then repaired and similar attention is paid to tears in the anterior segment of the pelvic floor, the closure of the perineum may follow that of the posterior segment of the pelvic floor or be done last of all. An artificial delivery so conducted is based upon surgical principles, and aims to leave the patient sound anatomically and free from infection and hemorrhage.

As the surgeon would use his own judgment in selecting the time for repair of bruised and lacerated tissues, so the obstetrician may elect immediate closure or delay a day or two until swollen tissues have become more nearly normal. The principle is the same to thoroughly examine and repair injuries to the genital tract following artificial delivery in accordance with surgical principles.

The indications for delivery by abdominal and vaginal section have been so greatly extended in recent years that a new field in experience and observation is opening. The classic indication for abdominal delivery was contracted pelvis of high degree, but this problem solved, the obstetrician is now engaged in the study of other indications which are more recently recognized and hence more interesting.

We recognize the fact that the fetal head during labor may become so wedged in the pelvic brim by the presentation of a parietal bone that it cannot be drawn through the pelvis without sacrificing the child, so when the chin rotates posteriorly and in some brow presentations, with transverse position in shoulder presentation, fetal impaction with threatened rupture of the uterus, may make vaginal delivery in the highest degree unsafe. If the fetus be living and in good condition, that fact in addition to those described, would give a clear indication for abdominal delivery. But in some cases when the fetus is dead, its vicious position is accompanied by septic infection and then the risk to the mother of vaginal manipulation and delivery is greatly increased; in desperate cases it may be necessary to sacrifice the uterus to save her life, but this can only be done by abdominal section.

We recognize ectopic gestation as a clear indication in the majority of cases, for abdominal section, although there may be a choice as to the time for operation. The essential of an ectopic gestation is the attachment of the impregnated ovum outside its usual and safe lodging, the body of the uterus. When the impregnated ovum attaches itself to the lower uterine segment, and especially when it descends so low that it covers wholly or partially the internal os, we are dealing with a variety of ectopic gestation quite as dangerous as tubal pregnancy. In placenta previa the fact that hemorrhage is apparent through the escape of blood from the vagina, is a safeguard to the mother as a signal of danger, on the other hand the ovum is attached to the upper extremity of the vagina abounding with bacteria. Vaginal manipulation in placenta previa is very apt to be followed by septic infection. The fact that the impregnated ovum is imprisoned within the abdomen or pelvis in extrauterine pregnancy shields the mother from this danger before operation is performed.

Shall placenta previa be treated as ectopic gestation? Obviously in the early months of pregnancy a very low attachment of the impregnated ovum requires the immediate emptying of the uterus with precaution against hemorrhage and infection. Where viability and life of the child cannot be ignored and if the placenta is lateral, marginal or partial, mother and child may receive adequate care if the membranes are ruptured and the uterus made to press the presenting fetal part firmly against the placenta. If this pressure be maintained during labor and postpartum hemorrhage be anticipated and prevented after labor, mother and child should do well with these simple precautions. But in cases where the placenta is central and completely over the internal os or where the greater portion of it occludes the internal os, the conditions are different. For some time we did not clearly understand the comparatively high septic mortality of these varieties of placenta previa, but it was observed that infection most often developed in those patients who had much vaginal manipulation and especially those in whom the vagina had been tamponed with gauze. The greater the vaginal manipulation the greater the risk of sepsis, and this has led in many clinics, to the strict limitation of vaginal examination and entire avoidance of the use of gauze packing in the vagina, in these cases. To-day the greatest success in dealing with central placenta previa is obtained by prompt delivery by abdominal section so soon after the first hemorrhage as possible. In unusual cases of partial placenta previa the same reasoning prevails. It must always be remembered that in placenta previa postpartum hemorrhage is a constant complication and that measures must be taken for its prevention or its control.

It is quite true that placenta previa central or largely so, may be managed by other methods than abdominal section if the life of the child be disregarded; version and the bringing down of a leg and breech, awaiting the development of spontaneous labor give good results for the mother at the expense of the child. The use of a dilating bag placed against the placenta or carried through the placental substance against the presenting part, in skillful hands, gives good results for the mother and fairly good results for the child, but neither of these require the prompt performance under proper conditions of abdominal delivery as soon as the diagnosis of the condition has been made.

In accidental separation of the normally implanted placenta we have a condition analogous to that of ruptured tubal gestation, where abdominal delivery affords the *only* prompt and secure method of rescuing the mother from insidious danger. While there may be difference of opinion concerning the treatment of placenta previa, the majority of obstetricians agree that accidental separation of the normally implanted placenta in the later months of pregnancy is best treated by section.

In complicated labor under what conditions today are we justified in embryotomy? This question is especially pertinent in view of the danger that delivery by abdominal section be performed for insufficient indication. Obviously the presence of a dead fetus in a genital tract too small to permit its spontaneous delivery, but large enough to warrant its removal if dismembered, calls for embryotomy. A question difficult to decide arises when we are confronted with a patient whose child is dead or dying and in whom circumstances are such that vaginal delivery would be very difficult and dangerous. If septic infection complicates this situation the position is still more difficult. The solution rests upon several facts, if all the circumstances and conditions point to septic infection as already present, has the woman living children, does she and her husband consent to sterilization? Under these conditions delivery by abdominal section followed by the removal of the body of the uterus and Fallopian tubes and fastening of the stump in the lower end of the abdominal incision, gives the best results. If the woman be primipara and can safely be delivered by embryotomy this should be done with the hope that subsequent pregnancies may be successful. If the woman be multipara and the conditions are favorable for vaginal delivery, labor may be terminated by embryotomy.

We must recognize the fact that conditions exist in some patients where the anatomical elements necessary for successful spontaneous labor are present, but physiological elements requisite for successful labor are absent. In many of these cases a pathological condition of the uterine muscle is at the root of the matter, and this can only be inferred from previous examinations and cannot be demonstrated without actual intra-abdominal examination. There may also be cases where we have no reason to suspect the pathological condition of the uterine muscle but where the woman, although her pelvis be large enough, may be so ill developed in the uterus, and the muscular and nervous supply of the uterus be so deficient that successful vaginal delivery may become impossible. In these cases the patient goes over the normal limit of pregnancy, engagement and descent do not develop, labor pains are few and weak and gradually cease and nature fails to establish the physiological function of parturition. In these cases, after a thorough study of the patient and after every effort has been made to put her in good physiological condition and bring about the development of labor, elective Cesarean section is very successful.

Shall eclampsia be treated by section, abdominal or vaginal? The retention of the term eclampsia in its common significance is unfortunate, it was originally applied to the convulsion of infants, and it means convulsion only. The toxemia of pregnancy early and late, conveys a clear and more accurate idea. From our experience we have long since abandoned abdominal section in toxic patients suffering from convulsions with one exception; the vigorous primipara with unshortened and undilated cervix having had few convulsions and who does not respond to eliminative treatment, here prompt delivery by abdominal section may save the life of mother and child. This would also be true of a multipara whose cervix was so thickened by scar tissue that delivery by vaginal section might be indicated, but these cases are comparatively rare. There is, however, a distinct field for elective abdominal section in the toxemia of pregnancy. When hygienic measures fail in the later months of gestation and toxemia steadily increases and there is no sign of labor, and when active treatment of toxemia fails to check its progress although the patient has no convulsion, prompt delivery by section is indicated. The induction of labor in such a case subjects the patient to prolonged irritation and is very apt to induce convulsions. The danger to the child in such an induced labor is not inconsiderable.

The discussion of the surgery of labor would not be complete without reference of obstetric operations for widening the pelvis. As Lorenz demonstrated a bloodless method of operating upon the hip-joint, so Mercurio taught obstetricians the bloodless method of enlarging the pelvis by using the posture of the patient which commonly goes under the name of Walcher's position, by this the weight of the lower extremities is made to rotate asunder 1 to 2½ inches of the pubes by rotation at the sacroiliac joints, a gain of ½ to 1 cm. in several important diameters of the pelvis is the result. Symphyseotomy has long since been discarded and pubiotomy in the majority of American clinics is rarely performed. The dangers of lacerations of the soft parts against the cut ends of the bone and subsequent hemorrhage and infection are sufficiently great to limit the use of this operation.

In the surgery of pregnancy we have already mentioned complications relating to the attachment of the impregnated ovum, ectopic gestation, with the ovum within the pelvis and abdomen requires abdominal section, and calls for no further discussion, but the surgery of the digestive tract in pregnancy is a modern field of great interest in obstetrics. Appendicitis complicating pregnancy is not an uncommon occurrence and a careful study of considerable numbers of cases of colycystitis in child-bearing women show that this condition frequently arises during pregnancy. Recent studies in infection in pregnancy by the bacillus coli commonis show that this process may manifest itself in the appendix or gall-bladder during pregnancy, and also in the puerperal state, and familiar examples of its activity are seen when this germ invades the pelvis of the kidney and the pyelitis of pregnancy is now well recognized.

Obstetricians have observed that appendicitis is dangerous in pregnancy in proportion as it occurs near to the termination of gestation, this probably arises from the mechanical pressure of the large uterus and the comparative difficulty of operating during the last months of pregnancy. In a pregnant woman having an infected appendix it should be removed as soon as the diagnosis is made, the earlier in pregnancy the better. Whether an infected gall-bladder should be drained during pregnancy or removed is not yet clearly established, but certainly during pregnancy or the puerperal state, the surgical treatment of colycystitis is often indicated and successful. The writer may illustrate this phase of the subject by calling attention to a case in which a young woman in her first pregnancy, was profoundly toxic. Rest in bed, hygienic and medical treatment was unavailing, although pregnancy had reached its natural limit there was no sign of labor. There was well-marked tenderness over the appendix and gall-bladder. This patient was delivered by elective abdominal section followed by removal of the appendix and drainage of the gall-bladder. Mother and child made a good recovery.

In the pyelitis of pregnancy many cases are successfully managed by medicinal or local treatment, but in some cases drainage of the kidney by incision is, in the experience of the writer, followed by good results. In none of these patients has pregnancy been interrupted and a good recovery has followed the operation.

In rupture of the uterus and in pathological conditions in the pelvis which render vaginal delivery impossible or unsafe abdominal section is often indicated. Experience shows that while it may be possible to deliver the child through the vagina when an ovarian tumor complicates the pregnancy, it is far safer to follow the delivery of the child by the opening of the abdomen and immediately removing the tumor: so in rupture of the uterus, if the conditions possibly permit, section is the safest procedure.

To what has been said the surgeon will immediately reply that the obstetrician should limit himself to the use of obstetric forceps and closure of the perineum. The gynecologist will join him in his dictum and both will asset that when the abdomen has to be invaded in pregnancy or labor, that the obstetrician should summon them for this purpose, but the complications of obstetrics frequently develop so suddenly and under such circumstances that it may be difficult to summon aid, possibly from a distance, and the important part of a surgical procedure is not its performance but an accurate diagnosis of the condition and a large experience which leads to a correct judgment as to the necessity for the operation. Here the surgeon and gynecologist are not competent to properly decide upon obstetric procedures, and hence the life of the patient demands that the obstetrician be competent to deal with complications of pregnancy and parturition. The immediate repair of the cervix was at first hotly contested as a procedure likely to lessen the operative work of several departments of surgery, but in the majority of obstetrical clinics to-day a considerable laceration of the cervix is immediately closed.

At this point that important part of the medical profession, the general practitioner, may ask in what capacity he enters the field of obstetric surgery. The general practitioner of medicine does not always recognize that he has within his grasp a most important, attractive and lucrative specialty in medical science, that of diagnosis. No man should undertake obstetric cases who cannot diagnosticate the presence or absence of engagement of the presenting part, and upon this diagnosis often depends the life of mother and child. Much obstetric practice is done by the general practitioner to retain the medical work of the family and one cannot expect the most efficient service under such conditions.

The multiplications of hospitals, the increase in maternity wards, better clinical training in obstetrics, good roads and motor transport, all make it possible in the greater part of our country to send complicated cases of confinement or pregnancy promptly to hospitals where they may receive proper attention and competent obstetricians should be present on the staff of each hospital however small. Complicated cases of pregnancy and labor should be considered as critical as appendicitis, ruptured ectopic pregnancy, gall-stones or strangulated hernia. When this condition prevails the maternal mortality or parturition in the United States will grow less and this country will no longer occupy the unenviable position of fourteenth in the list of civilized Nations in this regard.

A CLINICAL STUDY IN PREOPERATIVE AND POSTOPERATIVE BLOOD PRESSURE AND THEIR RELATION TO RENAL FUNCTION AND IN SHOCK AND HEMORRHAGE.*

By JOHN OSBORN POLAK, M.Sc., M.D., F.A.C.S.,

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GYNECOLOGICAL surgery, unlike much of the acute surgery of the general surgeon, is usually subacute or chronic, consequently women who are about to undergo gynecological operations, for the relief of their symptoms, repair of injuries or restoration of functions and general health, are commonly of lower physical tone, and more exhausted physically than those suffering from the acute injuries which demand immediate surgical intervention. Sufficient time is therefore allowed for a careful preoperative study of their lesions, as well as of their cardiac force and renal functions. The trained gynecic surgeon is learning more and more to appreciate what this preoperative study means in reducing his morbidity and his mortality.

For the past five years, at the Long Island College Hospital we have operated on no case which has not been in the hospital for a sufficient length of time to *allow a preoperative diagnosis,* and the proper laboratory examinations of the blood, urine, pulse-pressure, kidney function and comparative temperature records. By insisting on this, many women who would have been bad operative risks, owing to their poor muscular tone, cardiac weakness or deficient kidney function, have been saved from postoperative complications and have been restored to health with smooth convalescence.

While working along these lines we have made an attempt to determine the clinical value of preoperative pulse-pressure and its relation to kidney function, on the operative prognosis of gynecologic patients.

In order to make these determinations, the following preoperative routine has been adopted:

On admission the cardiac force of each patient is studied in the following manner: The systolic and diastolic pressure is taken, with the patient in the recumbent position and the pulse and pulse-pressure noted at rest. The patient is then seated on a stool, and instructed to raise her arms and extend and flex the forearms for two minutes, when the systolic and diastolic pressure is again taken, and the pulse-pressure is again recorded, as after moderate exercise. Finally, the patient is made to stand up, with the legs spread apart, and is directed to raise a pound weight lying on the floor, between the feet, up over her head, then lower it between her legs, then raise it again, and lower it, repeating these motions, at first, ten times, then twenty times, when the systolic and diastolic pressures are again taken, and recorded, as after active exercise. Naturally, the rate of the heart action is accelerated and the systolic pressure raised, but if the heart muscle is of good quality, little or no change is noted in pulse pressure, which should bear a relation to the systolic pressure of one to three, or more. When this relation is broken and the pulse-pressure is one to two, or two and one-half, our experience has been that the cardiac muscle of that individual is defective and does not stand a long operation in the Trendelenburg posture. For instance: The average pulse pressure, in some 300 patients examined, is about 35 mm. of mercury and the average systolic pressure of the gynecologic case is about 130. This gives us a relation of a little more than one to three, as an index of the cardiac force. Suppose, however, the pressure readings were 140 over 80, this would give a pulse pressure of 60 or, 60 into 140, which is but 2⅓. A patient with such a pulse-pressure has poor cardiac muscle and when placed in the Trendelenburg posture, which always causes a certain amount of cyanosis, and raises the pressure, places a tax on the heart muscle, which it is frequently incompetent to stand, and after the patient is lowered to the horizontal posture, decompensation occurs.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 7, 1919.

The value of such a test is at once apparent in estimating the quality of the cardiac muscle, especially in those women who have been ill for a long time, with infective disease.

We next make a preoperative estimation of the phenolsulphophthalein output of each patient, to estimate the kidney function. We have found that averaging the normal pulse pressure at 35 mm. the "phthalein" output for the two hours, in the normal case, averages about 60 per cent.

Where the pulse pressure is high, say 60 or 70 mm., the phthalein reading will be either high or low, depending on the state of the kidney structures. When the phthalein reading is low, the pulse-pressure has to be relatively high to compensate for the diminished renal function. On the other hand, when the phthalein reading is low, for example, but 20 or 30 per cent. in two hours, and the pulse-pressure is also low, or if it is high and the relation of the pulse-pressure to the systolic pressure is disturbed in its normal ratio-bearing a relation of 1 to 2, instead of 1 to 3, or better, the patient has proven to be a poor operative risk, as the condition of the cardiac muscle is always questionable. These patients have invariably given us trouble in their postoperative course.

Our only fatal case of postoperative cardiac dilatation showed a preoperative pulse pressure of 24, and a phthalein output of only 29 per cent. Under ether stimulation, and the Trendelenburg posture, the pulse pressure was maintained throughout the entire operation at 30 mm., but promptly, on her return to bed and after the stimulating effect of the ether had worn off, the pulse pressure dropped to 20 mm. and resisted all known methods to raise it. The patient died, five and one-half hours after coming from the operating room. This experience led us to make a further study of the effect of ether, the Trendelenburg posture and prolonged operation on renal function, as shown by the phenolsulphophthalein output.

Our routine has been, for several years, to have the anesthetist watch the pulse pressure and report the same to the operator at ten-minute intervals during the operation, and to take the systolic and diastolic pressures immediately at the close of every operation, while the patient is still under ether stimulation, again in one hour, in six hours, and twenty-four hours after the operation is completed. In addition to this, a record of the pulse rate is made and charted every fifteen minutes for the first six hours following the operation.

In shock or suspected hemorrhage the systolic and diastolic pressures are taken every hour until reaction has taken place.

It is also our routine to make a complete blood count and hemoglobin estimation immediately on the return of the patient from the operating room.

This gives us a control for comparison with subsequent pressures, and counts, should complications occur in the postoperative course. No step in our routine has been of more clinical value than this detail, for, with accurate knowledge of the blood state, in conjunction with blood pressure readings, we have been able to differentiate between shock, hemorrhage and postoperative cardiac dilatation.

Normally, after an abdominal section of fifty to eighty minutes, with ether anesthesia, the induction being made with nitrous oxide and preliminary morphine and atropine, there is a rise of from five to fifteen points in the hemoglobin reading as taken from peripheral blood, in 80 per cent. of the cases studied, which rise was directly proportionate to the length of anesthesia and the amount of the anesthesia used. In 12 per cent. the hemoglobin reading remained unchanged. In one-half of these cases, however, the length of the narcosis was considerably below the average of the series. The remaining 8 per cent. showed a drop in the reading. These were cases of hysterectomy for chronic pelvic inflammation, in which there was considerable blood loss during the operation. Red cell counts were taken in every instance; these remained fairly constant with a variation ranging from one hundred thousand to two hundred thousand cells, which we feel is entirely within the range of error. In from six to forty-eight hours the hemoglobin reading had practically returned to what it was previous to the operation.

Routine blood pressure, taken one hour after the operation, after the effect of the ether stimulation has passed off, showed an average systolic drop 14.2 mm. of mercury; while the diastolic reading showed an average fall of 7 mm. In the majority of cases the blood pressure returned to the preoperative readings in from four to twenty-four hours following the operation. In those cases which were distinctly shocked, the pressure returned to normal on the second or third day postoperative.

There was a constant and rapid rise in the leukocyte count which was first noted one hour after operation, and increased for six to twelve hours. The average rise by the end of the twelfth hour was 12,000 cells. The differential count showed a relative increase of the polymorphonuclear cells, their average rise being 14 per cent. The lymphocytes were accordingly reduced, while the transitional cells remained unchanged.

Six hours after operation the first "phthalein" estimation is made of the kidney function. A catheter is left in place for two hours, and the readings made from the collected urine. So far in our work one interesting observation has been noted, that, notwithstanding the diminished urinary output, which always follows the administration of ether, which averages about 18 ounces in the first twenty-four hours, there is only a negligible change, usually not over 10 per cent. in the "phthalein" eliminated, provided the pulse pressure has remained normal.

But three exceptions to this constant observation have been noted—one, a nephrectomy, for a large cystic kidney, where the immediate effect of removal of the kidney was to reduce the "phthalein" from 85 per cent. preoperative to 29 per cent. postoperative—yet, within thirty hours the output had increased to 65 per cent. Another exception was a myomectomy, in which there was considerable blood loss during the operation, with a consequent fall in pulse pressure. A half a grain of morphine was used to maintain the anesthesia during the last half of the operation, while the administration of ether was suspended.

The operation was followed by severe shock, the blood pressure fell to 78 over 55 mm. and remained so for several hours. The urinary output in the first twenty-four hours was but four ounces, and the phthalein elimination only 20 per cent. It was seventy-two hours before the urinary output and the kidney function approached the preoperative records. This case serves as a good illustration of the relation of pulse pressure to kidney function.

A third case which shows a marked discrepancy between preoperative and postoperative readings, was that of a woman with a large subvesical myoma, who was subjected to a total hysterectomy. Her hemoglobin on admission was only 40 per cent. The systolic pressure 150 over a diastolic of 110 mm. This patient showed a preoperative functional phthalein of 65 per cent. after twenty-four hours of preoperative rest in bed. She had a light ether-oxygen anesthesia of nearly an hour, supplemented by half a grain of morphine during the operation; this morphine was given after the anesthesia was completely established. She left the operating table with a pulse of eighty, of good quality, and a pressure of 155 over 115 mm. Her phthalein, at the end of six hours, was 20 per cent. and only ten ounces of urine was secreted in the first twenty-four hours. This increased to 26 ounces in the second twenty-four hours, as did phthalein, which rose to 40 per cent. These two cases suggest to us that while morphine definitely minimizes the shock, and may be used to advantage when the patient is fully anesthetized to continue and complete the operation without the further administration of ether, it has the effect of diminishing the urinary output in the first few hours after operation, even when there is no disturbance in the pulse pressure.

In the second case which I have recorded, the low pressures may have had a direct bearing on the kidney output, but in the last, the pulse pressure remained constant, and therefore cannot be credited with inhibiting the kidney function, nor, in this case, was there any blood loss or shock, hence, we feel it is fair to conclude that the diminished output was directly due to morphine.

Clinically, certain facts stand out in the differentiation between shock and hemorrhage: (1) In hemorrhage the pulse rate is always progressively increased; (2) the pulse pressure gradually decreases, the systolic gradually approaching nearer and nearer to the diastolic; (3) the leukocyte count in hemorrhage is always increased, reaching 18,000 to 20,000. The striking similarity in the clinical manifestations of these two conditions is due to the fact that in hemorrhage, the blood is permanently lost from the vessels, while in shock, it is accumulated in the large venous trunks of the splanchnic plexus and therefore is of as little use in maintaining the blood pressure as if the whole volume of blood was actually outside of the body. This accounts for the reduction in systolic pressure in both conditions, but in shock the pulse rate does not progressively increase, neither does the pulse pressure decrease and as the blood is within the vessels and not poured out from them, the leukocyte count remains the same or decreases.

From this study, which now includes more than 350 consecutive abdominal cases, we feel justified in drawing the following conclusions:

First.—That the pulse pressure is the test of the muscular strength of the individual woman's heart, when endocardial lesions can be excluded. The index of the muscle competency is shown by the relation of the pulse pressure to the systolic pressure, which should be 1 to 3 or more, if the compensation is adequate—

Second.—That the efficiency of the kidney function is directly dependent upon the cardiac force of the individual, provided the kidney structures are normal or approximate the normal.

Third.—That ether anesthesia of an hour does not disturb the relation of the pulse pressure to kidney function, unless the operation is accompanied by considerable loss of blood.

Fourth.—That when the preoperative kidney function is low, the pulse pressure must be relatively high, to compensate for the deficiency, for it does no good to add saline by skin or bowel, or by infusion, unless there is sufficient cardiac strength to take it up and carry the column along.

Fifth.—When both the pulse pressure and the "phthalein" output are low, or the relation of the pulse pressure to the systolic pressure is as 1 to 2, the operative prognosis should be guarded.

Sixth.—That morphine, in large doses, used during operation, seems to help in diminishing the shock, but has a definite effect in diminishing the kidney output.

Seventh.—In the majority of cases there is a moderate fall in both the systolic and diastolic blood pressure, following ether anesthesia, the inhalation of oxygen after the withdrawal of the ether diminishes this fall, but its effect is only transient.

Eighth.—In cases of shock, especially where there has been much blood lost during the operation, the fall in systolic pressure is greater than after a long operation without blood loss.

Ninth.—The pulse pressure is a better index of hemorrhage or cardiac failure than the systolic pressure, and finally, there is a constant rise in the leukocyte count in the presence of actual hemorrhage, while the leukocytes fall in shock.

CORPUS LUTEUM EXTRACT IN VOMITING OF PREGNANCY WITH REPORT OF CASES.*

By JAMES KNIGHT QUIGLEY, M.D.,
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NOT long after reading Doctor Hirst's first paper on corpus luteum extract in Vomiting of Pregnancy, over two years ago, the writer had under treatment what to him was the most interesting of the following brief series of cases, and the first case in which he employed this treatment.

Case I.—Miss M. M., aged eighteen, a stenographer, had had scarlet fever at fourteen, never robust and rather neurotic.

Present history: Patient first noticed yesterday (March 7th) a swelling in right groin. This proved to be a small inguinal hernia, for which a truss was secured. Two days later she began to vomit, and on the 10th rejected everything ingested. Urine analysis was normal. Patient was put to bed and various simple foods tried. She was obstinately constipated and complained of an intense epigastric burning sensation. For three weeks her condition showed little change, varying from the retention of a small amount of liquid nourishment to the rejection of everything, including champagne. She slept but little and became quite emaciated. Gastric lavage was tried to no avail, as was the entire list of ordinary gastric sedatives and antemetics. Up to this time I thought that the acute inguinal hernia and the discomfort of a newly fitted truss in a very neurotic girl might account for the vomiting, but as the truss was removed, and the patient kept in bed, it seemed as if this theory must be abandoned, and finally the suspicion of pregnancy arose, but as the mother of the patient was always present at the time of the visit, no opportunity was given for close questioning; however, after an unusually bad day for the patient, I determined to give corpus luteum a trial. On April 5th, 1 c.c. was given deep in the deltoid muscle, and this was repeated each day for four days. After the third dose the patient was retaining semi-solid food, but vomiting once or twice daily. The dose was given at intervals of two days for five more doses, the last vomiting occurring on the 20th. The treatment in this case served as a diagnostic measure. Confirmatory evidence of pregnancy was obtained later, the patient admitting that her last menstruation occurred on January 7th. This case, though extremely neurotic, was not cured by suggestive therapy, for nothing was guaranteed to the patient from the employment of corpus luteum.

Case IX.—L. W., aged twenty-five. First seen about ten weeks after last menstruation. Has vomited severely for one week. After a period of moderate nausea of four weeks' duration corpus luteum, gr. v. per mouth, three times daily was given with a cessation of both nausea and vomiting in two or three days, and no return.

Case XII.—R. W., aged thirty-five. Last menstruation September 30th. First noticed vomiting November 15th. Three injections were given in December, for vomiting, with relief. In January a salivation developed, so profuse and annoying that the patient was obliged to remain at home. This symptom I believed to be of the same origin as nausea and vomiting; accordingly, one dose of corpus luteum was given daily for four succeeding days, with complete relief, much to the gratification of the patient.

Case XVI.—J. M., aged twenty-one, a primipara. Last menstruation December 18th. Nausea and vomiting began January 20th, at first in the morning, gradually increasing in severity until about February 28th, when she went to bed and was on a limited diet for a week. Vomiting stopped, but returned upon her leaving her bed. For the last six days, March 22nd-28th, she has been in bed constantly, and retained nothing. Physical examination was without particular interest, except that she showed slight loss of weight and a dry coated tongue; blood pressure 80/130—pulse 88. The patient was sent to a hospital and kept in bed. Broth and whey were allowed, and she was given corpus luteum extract injections daily, varying from one to three in number, for one week—twelve doses in all. Five per cent. glucose solution was given per rectum by the drip method in large quantities, and always retained. Sodium bicarbonate solution was for a time alternated with this, but was not retained so well. After two or three days nutritive enemata were given in addition to the glucose solution, and all nourishment by mouth stopped. In spite of the specific treatment, combined with efforts to control the acidosis, the urinary reports became more and more ominous. Her urea-ammonia coefficient ranged in five examinations from 15:1 to 5:1. The acetone and diacetic acid showed a corresponding increase, and her pulse which for a few days had been 80 to 90, going to 110, when she began to look badly and was a bit more than drowsy at this point. Therapeutic abortion was done, with marked amelioration of her threatening signs and symptoms. In this case corpus luteum was a complete failure.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 7, 1919.

Case XV.—Illustrating the efficiency of corpus luteum in a case under hospital treatment for three weeks.

Mrs. B. L., aged thirty-three. This is her third pregnancy. Suffered considerable from nausea and vomiting with two previous pregnancies, but not as severely as with the present. This patient had gradual onset, with morning vomiting, merging into the all day type. She was admitted to the medical service of the hospital March 17th, three weeks previous to my first observation. During this time she has had various gastric sedatives, cerium oxalate bismuth, even cocaine (which she says made her worse). Various diets tried, including limitation to whey. She is very positive she cannot go through this pregnancy and thinks the uterus must be emptied. Urinalysis showed a trace of albumin, trace of acetone, no diacetic acid and an ammonia-urea-coefficient of 20:1, a moderate degree of intoxication. Corpus luteum extract grain 1 c.c. every eight hours for six doses was given, and she was kept on liquids. After the sixth dose she did not vomit until April 12, five days after first dose. This mild relapse was attributed to the limitation of her diet to liquids. A more liberal diet was ordered and corpus luteum resumed, one dose daily for five days. Her ammonia-urea-coefficient went to 30:1 and she left the hospital very much improved.

Summary.

Here again I wish to offer a word of apology for assuming to summarize the results of such a small series of cases, but as they correspond fairly well with the reports of other observers, I wish to add this number to the sum total.

Number of cases treated, 17.

Number of cases benefited permanently, 12.

Number of cases benefited but relapsing, 4 (not enough given).

Number of cases of complete failure, 1.

One case pruritus, (no relief).

Average number of doses, 7; had the four relapsing cases been given more at the onset as a routine there would probably have been more cases permanently benefited.

Preparation used: 1 c.c. ampoule containing 0.2 gm. desiccated substance of the gland.

DETAILED REPORT OF CASES.

No.	1st dose.	Last dose.	No. of doses.	Result and Comment.
1	4/5	4/20	9	Fine, neurotic patient.
2	4/14	4/23	5	Fine temporarily, return one month later.
3	6/14	6/16	3	Fine.
4	7/9	7/13	3	Fine temporarily, return in a mild degree two months later.
5	7/21	7/26	4	Much better while under treatment which should have been longer.
6	10/12	10/20	7	Fine.
7	11/15	11/22	5	Good, last vomiting on 24th, chronic nephritis.
8	2/4	2/15	13	Fair, relief from vomiting partial from nausea.
9	4/27	4/30	5 per mouth	Fine.
10	7/12	7/18	5	Remarkable.
11	8/5	8/18	12	Relief from vomiting not from nausea, tried administration by mouth, no result.
12	12/16	12/18	3	Complete relief from vomiting of moderate extent.
	1/5	1/9	4	Relief from profuse salivation.
13	1/12	1/19	4	Marked relief at first, return in a modified form.
14	3/10	3/14	5	No relief from severe pruritus.
15	3/29	4/4	12	No relief, pernicious form.
16	4/7	4/15	11	Fine, in hospital, ordinary treatment unavailing.
17	5/1	5/7	7	Good, nausea only.

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REPORT OF TWO UNUSUAL CASES OF NASAL SINUS SUPPURATION IN RELATION TO MASTOIDECTOMY.*

By HUGH B. BLACKWELL, M.D.

NEW YORK CITY.

In the first of these cases the nasal sinus suppuration preceded the mastoidectomy, and in the second it followed the mastoid operation.

The first patient, F. E., an adult, came under my observation in the Spring of 1917, at that time suffering from a severe double acute mastoid inflammation, and giving the following history: Some twenty-three years previous while living in Petrograd, Russia, she became afflicted with an acute antrum inflammation. The attending specialist extracted the second bicuspid, and bored an opening from its root into the antrum cavity, a rubber tube was then inserted through this opening into the cavity draining the antrum. On the second day in attempting to remove the tube it was accidentally pushed into the antrum, and, according to the patient, it had remained there ever since. On examining the nose, the middle meatus of both sides was found to be filled with polypoid tissue, pus and granulations. On opening the mouth, the second left upper bicuspid was found to be missing, and protruding granulations were seen springing from its socket. An applicator tightly wound with cotton was readily passed through the opening and up into the antrum. A double mastoidectomy was done and during the five weeks of convalescence a series of nasal operations were performed, for the purpose of removing the polyp and diseased ethmoidal cells. At the third of these operations a black object was noticed in the left middle meatus, which could be readily recognized as a foreign body. It was easily removed with the Knight forceps, and identified by the patient as the rubber tube which had been placed in her antrum twenty-three years previously, and which I hereby present — two inches long and one-quarter inch in diameter. The patient made an uneventful recovery and developed in a few months from the very thin anemic person that she formerly had appeared to be into a well-nourished woman with thirty pounds more weight than she had ever had before.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May, 1918.

The point of peculiar interest in this case to me was the fact that it was possible for an individual to harbor a foreign body for a period as long as twenty-three years, before developing an infective aural or other serious complication.

Case II. In this patient the mastoiditis preceded the sinus infection. Nine years ago the patient E. H. first came under my care, suffering with a subperiosteal abscess. I performed a mastoid operation and found the sigmoid sinus to be converted into a sloughing collapsed ribbon-like structure, lying in a large abscess cavity. The process was well walled off, and from the history of the patient I judged that the thrombosis had been established for at least several weeks, possibly a month or more prior to the operation. The jugular was excised and the patient made a very good recovery. I lost track of the patient then and did not see him again until a little more than a year ago, when he was referred to me by Dr. Reese of the New York Eye and Ear Infirmary, with the following history: Five days previously he had a toothache, two days later the tissues about the left eye began to swell, since then swelling and pain about the eye had increased. Local examination—the eye showed marked exophthalmus, great swelling of both lids, marked chemosis, vision much reduced, patient had been unable to close his eye for twenty-four hours, and as a result the lower cornea was occupied by a sloughing ulcer. All the tissues about the eye were intensely inflamed and swollen and the globe itself was under great tension. The patient was etherized and a curved supraorbital incision was made through the eyebrow. On incising the periosteum there was a hissing sound of escaping gas and bloody pus of an exceedingly foul odor, fecal in character, which shot upward a distance of some two feet. The odor was overpowering, exactly similar in character to that of a ripe ischio rectal abscess. Bacteriological examination of the pus showed the presence of the colon bacillus. The frontal sinus was curetted, and the ethmoid cells were removed.

The sphenoidal sinus and antrum was opened and curetted. In all of the sinuses the same foul pus was found. The orbital fat was green as far back as it was possible to expose it. The bony wall lying between the ethmoidal cells and the orbit was removed, together with the wall between the antrum and the nose. On looking into the mouth the second molar on the same side was observed to be black and freely movable. It was readily extracted by fingers. A grooved director, meeting no resistance, was passed upward through the tooth into the antrum. No sutures were taken, a wet boric acid dressing was applied. Subsequently the wound was dressed three times daily for three weeks, then twice daily for two weeks before the fecal odor disappeared. At each dressing the antrum and wound was irrigated with peroxide and boric acid. The patient finally recovered in about ten weeks, with normal vision, save for some diplopia caused by the eye being displaced downward, owing to loss of orbital fat.

The interesting features of this case to me are: First, it was the most severe case of acute nasal pan-sinusitis that ever came under my observation.

Second, that while the local inflammatory reaction was most violent yet the surrounding tissues exhibited the same tendency toward limitation of the process that was shown by the mastoid infection of eight years previous.

Third, that a good prognosis is sometimes justified even in the most severe infections of this kind, provided it be associated with a marked local or constitutional reaction.

Fourth, owing to the frequent pressure of colon bacillus and other putrefactive gas forming bacterial agents in the mouth and upper pharynx, the pressure of gas in the infection of these and adjacent regions is not of the same fatal significance as it is of infections elsewhere in the body.

Fifth, I attribute the good result in this case largely to the frequent dressings and irrigations.

Finally, in considering these two cases together, it might be said that they mutually illustrate the course of the most extreme types of acute and chronic antrum and nasal sinus infection, showing their surgical relations to the teeth and indirectly to the mastoid.

SURGERY AT EVACUATION HOSPITALS.*

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THE Evacuation Hospital of the Western battle front fulfilled a very different function from that of its namesake in the old army organization. The latter was a station for sorting or triage; change of dressings; operations of immediate urgency; treatment of shock, rest and recuperation, before the next stage of the journey back to the Base Hospital.

Definite treatment and major operations were reserved for the Base Hospital, which in point of transportation time was many hours, sometimes days, behind the fighting line or zone of active operations.

Experience in the first year of the war showed that practically all war wounds sent to Base Hospitals for the primary operation, suppurated profusely and that loss of life, limb and function was great; that loss of time in prolonged convalescence of those who recovered was excessive, and that the resultant loss of effectives to the fighting forces was a serious military problem. In the efforts to overcome this universal infection and secure prompt healing, the recognition of the importance of the principle of early operation, *i. e.*, during the period of contamination, (12-16 hrs.) as contrasted to the later period when the infection had penetrated deep into the tissues, was perhaps the most important factor.

Carrel's wonderful work demonstrated that with debridement of the wound and use of the Dakin solution applied with proper technique, wound infection could be controlled, and suppuration eliminated. The stimulus and challenge of this discovery was in a measure responsible for the development of the method of early debridement with primary or delayed primary suture, without the use of chemical agents, which was brought to such a degree of perfection, as especially in the French and Belgian Services, by such Masters as DePage, LeMaitre, Duval, and their colleagues.

These are some of the factors which changed the function and organization of the Evacuation Hospital, and made it the most important unit of the army hospital system. To fulfill this function it had to be near the fighting line, 10 to 20 k.m. as a rule; to have a complete surgical equipment; X-ray department, laboratory; surgical dressings and supplies in large amounts, to meet the stress of combat conditions. It also had to be manned by an adequate number of surgical teams, headed by skilled operators, so that work at full capacity could go on night and day with proper personnel available at all times.

Thus organized it was possible to operate upon cases within a few hours of the receipt of injury, and to secure clean healing in a high percentage. To pass few cases to the rear unoperated for lack of time or facilities; to radiograph and locate projectiles in nearly all cases before operation. The saving of effectives for the fighting line was enormous.

I saw this system working at various points along the French front in the Summer and Autumn of 1917 and the Spring of 1918, and worked for weeks in one of their evacuation Hospitals on the South Bank of the Vesle during a period of battle. With the relatively unchanged battle line of the three years preceding the Spring drive of 1918, the system worked admirably, but with the rapidly shifting line of the Spring and Summer of 1918, conditions changed greatly, and the large immobile evacuation hospitals of the French type, had to be supplemented by Mobile Hospital Units, which could shift position rapidly to maintain to some extent the relative distance from the line necessary to carry out the principles of wound treatment before mentioned.

The type of surgery done at Evacuation Hospitals may be grouped under several headings, leaving out of account non-operative cases, passed through, where it served the purpose of triage as well; the bulk of this work being usually done at a forward point; Field Hospital or special Triage.

Let us consider first the

LIGHTLY WOUNDED.

This group, seemingly the least important and including many trivial cases, is in reality, from a military standpoint, one of the most important, for properly treated, with cleanly healed wound, the patient is ready to return to the front in a short time, where with careless or insufficient treatment or the development of infection, convalescence might require weeks or months. A well organized department, usually with separate staff and equipment, was therefore essential, and by caring for hundreds of these cases each day, could relieve the main operating department appreciably. Being sent directly to this department by the admitting officer, they did not clog the work of the part of the hospital devoted to the care of the seriously wounded.

WOUNDS OF SOFT PARTS.

It was in this large and important group, including all types of wounds, from all types of missiles, but excluding fractures, injury to joints or viscera, that some of the most brilliant results of modern war surgery were seen. LeMaitre reported debridement with primary suture in 80 per cent of all cases, and he included wounds of bone (not fractures) in this group, and 98 per cent of successes in all cases so sutured. I saw in his wards at Bouleuse, near Rheims, nearly one hundred and fifty such wounds dressed one morning with clean primary union in all except two. In this group the skill of the surgeon counts much; knowledge of anatomy, clean technique, and a trained eye and hand are assets, in following the long tortuous tracts, and removing the last bit of contused and devitalized tissue; for thoroughness spells the difference between success and failure.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 8, 1919.

It was in this group that the principle of delayed primary suture as contrasted to immediate closure was tried out and found to have distinct advantages, especially in times of stress when patients had to be hurried on to hospitals of the interior, a few hours after operation and could not be watched by the operating surgeon through the critical period of healing.

The development of gas gangrene in a number of cases sutured primarily in our service, and passed on quickly to the rear, brought much discredit on the method, which it hardly deserved, for we were novices at the time and could not be expected to exhibit the skill and judgment of the veteran surgeons of our allies. It helped to emphasize, however, the dictum of the French, that no wound should be closed by primary suture which could not be kept under the care of the operating surgeon responsible for it, for at least one week or until danger of infection had passed.

This meant that in time of battle and great stress, all wounds of soft parts were debrided, packed lightly with gauze, and closed, if clean, from 3 to 8 days later at a hospital in the rear. Bacterial counts from smears determine whether or not the wound is suitable for closure or must be left for a later secondary suture. Delayed primary suture (done in less than 8 days) differs from secondary suture in that no freshening of skin edges or granulating wound surface is required, the wound being closed by suture as though it were freshly made. When properly checked by bacterial counts, prompt union results in nearly all cases. Certain wounds of soft parts from their extent, proximity to vital structures or other anatomical reasons are not susceptible of complete debridement and consequently not suitable for primary or delayed primary suture. Such wounds must be left open until they become sterile, either by the use of the Carrel-Dakin treatment, or by simple drainage, when they may be closed by secondary suture or allowed to heal by granulation.

LeMaitre estimates that 20 per cent of wounds of soft parts, including wounds of bone are unsuitable for primary or delayed primary suture; the experience of our earlier evacuation hospitals in relatively quiet times would place it higher, say 30 to 35 per cent.

War Wound Fractures.

By proper treatment of war wound fractures at the Evacuation Hospital, it was possible often to prevent the development of infection, obtain clean healing of the wound and convert the open fracture into a closed one. The problems of proper alignment and position, protection of adjacent joints from loss of function and muscles from atrophy until firm union was secured, were greatly simplified. Under proper conditions, in patients received less than 15-20 hours after injury, about 50 per cent of fractures could be successfully treated by debridement and early suture. Relatively few fractures of the femur could be included in this group, and in times of great stress such as our battles of Chateau Thierry and the Argonne Forest, with the inevitable delays in transporting the wounded and the overwhelming numbers passed through our Evacuation Hospitals, it is probable that the percentage so treated was very small as the numerous cases of chronic suppurative osteomyelitis in our returned wounded would seem to indicate.

The problem of the fracture at Evacuation Hospital was that of the wound: immobilization in good position, while important, was subordinate, for the first essential was to prevent or overcome wound infection and its disastrous sequel, osteomyelitis. An attempt was made early in our organization overseas, to place all fractures under the orthopedic department from front to rear, but it was soon abandoned as far as the Evacuation Hospital was concerned, as it was recognized that at this early stage the highly trained general surgeon could best insure safe wound treatment.

I do not for a moment underestimate the importance of proper splinting, nor the valuable work done by the orthopedic division in providing large numbers of Thomas and other transportation splints and making them available in the Divisional aid posts and hospitals at the front.

Again at the Base Hospital, mechanical treatment of many of these cases became the most important factor, whether primary wound treatment had succeeded in preventing infection or not. But at the Evacuation Hospital treatment of the wound was the paramount issue, a surgical problem, on the proper management of which, the future progress of the patient so greatly depended.

In addition to thorough debridement of devitalized and contaminated soft tissues, the question of removal of shattered bone fragments was of great importance. I will simply say that the tendency was toward conservation of all fragments not completely detached, which might be useful as a scaffolding for new bone formation, and many apparently hopelessly shattered limbs were saved by this policy.

Joint Injuries.

Perhaps the most notable advance made in the treatment of joint injuries was the work of Willems of the Belgian Service, in establishing the principle of early active motion immediately after operation, whether the joint was infected or not. The treatment of the wound consisted of debridement of the soft part wound, removal of foreign bodies or loose fragments of bone, clots, etc., from the joint, followed by closure of the joint cavity without drainage, but not too tightly stitched, so that effused joint fluid could escape between the sutures. The active motion actually pumped fluid out of the joints and prevented distension, in the meantime keeping the joint surface in good condition, guarding against erosion and ankylosis, and against atrophy or contracture of the muscles.

In articular fractures, small, loose fragments were removed, but large fragments were often retained, when not completely detached, and when their removal would endanger the future strength and contour of the joint.

The soft part wound was sometimes closed primarily, sometimes left open for delayed primary suture. Whether Willems active motion was instituted at once or not, closure without drainage, and the other principles of procedure mentioned were general routine.

Primary resection was occasionally necessary for extensive bone injury but was avoided whenever possible. The successful treatment of joint injuries became in many respects one of the brilliant chapters of war wound surgery.

Of the special surgery of the abdomen, thorax and head I will say little. Whatever was done in the way of a primary operation, was done at the Evacuation Hospital, and called for the best skill and judgment of our most experienced surgeons. Much experimental and advanced work was done in surgery of the thorax, and the brilliant work of Cushing in injuries of the head is too well known to require mention.

The great handicap of the surgeons of the Evacuation Hospital was the necessity of quick evacuation of patients in time of battle, and inability to follow their cases. In quiet times it was often possible to retain patients a week or ten days but seldom longer.

Attempts to establish a system of radial control by consultants for sectors, and by shifting surgical teams between Evacuation and Base Hospitals in the same sector, had been made, but had not reached a practical solution when I left France. By this means it was hoped to enable the operating surgeon to follow the results in their cases to some extent.

I have tried to outline briefly the kind of surgery done in the Evacuation Hospitals. It was work of the greatest importance and responsibility, which demanded the services of the most experienced surgeons, and on which depended to a large extent, the future outcome of the cases.

In our own service of the A. E. F., the best surgeons were called from the personnel of Base Hospitals and other organizations, put in charge of surgical teams and sent to Evacuation and Mobile Hospitals. As many of the ablest surgeons in America were on the battle front, our wounded were assured of the best care their skill could afford, at the earliest possible moment.

THE POLICY AND PROGRAM OF THE PHYSICAL RECONSTRUCTION OF DISABLED SOLDIERS OF THE UNITED STATES ARMY.*

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THE author has recently written a paper on the "Rehabilitation of the Disabled," which has been published in the *Journal of the American Medical Association.*† Inasmuch as this article is accessible and includes a statement of the necessity for the physical reconstruction and rehabilitation of disabled soldiers; the experience of the allies associated with the United States in the war in the physical reconstruction of their disabled soldiers; and the details of the program of physical reconstruction as carried on for the disabled soldiers of the United States army; much that would otherwise be considered essential will be omitted from discussion of the subject in this paper.

The policy of the medical department for the physical reconstruction of disabled soldiers, and later extended to disabled sailors and marines, was formulated in the office of the Surgeon General in August, 1917, practically applied in some of the general military hospitals early in 1918, and was finally approved by the War Department July 29, 1918.

Physical reconstruction, as it is now defined, is recognized as the continued management and treatment of the sick and wounded disabled soldiers carried to the fullest degree of maximum physical and functional restoration consistent with the nature of the disability, by the employment of all known measures of modern medical management, including physio-therapy, manual and mental work, recreational play, and military drill.

To carry out this policy, a program was formulated to establish in the office of the Surgeon General a division of physical reconstruction for administrative purposes, and a department of education and a department of physio-therapy in each of the general military hospitals designated by the Surgeon General to function in the physical reconstruction of disabled men.

The division of physical reconstruction in the office of the Surgeon General was organized with a director responsible for the administration of the work. Subsections were organized on education, physio-therapy, the training and education of the blind, the training and education of the disabled soldiers who suffered from deafness or from speech defects, and after the armistice a subsection on convalescent centers. A director was appointed and made responsible for the activities of each subsection. The Surgeon General was able to secure a personnel of men from civil life to serve as volunteers in an advisory capacity, or as officers commissioned in the Sanitary Corps of the medical department, qualified by education and experience to serve in general and technical education and in psychology, for administrative service in his office and in each of the hospitals which function in the work of physical reconstruction. An additional personnel of instructors in general and technical education, in academic and commercial studies, and in farm and garden work was secured as an enlisted detachment of the medical department, from young men qualified for the service by experience in civil life. Many of the disabled returned soldiers were qualified to give instruction, especially in technical trades, and remained in the service to teach and train their fellow disabled soldiers.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 8, 1919.

† "Rehabilitation of the Disabled," by Colonel Frank Billings, M.C. *J. A. M. A.*, Vol. LXXII, 1919, p. 1505.

In the application of curative work in wards for bed and chair patients, women were secured as civilian employees, designated as Reconstruction Aides in Occupational Therapy. Only those women were accepted for this service who were fundamentally qualified because of previous education or experience as teachers in high schools, colleges, and universities, and who were willing to take short courses of intensive training in the arts and crafts. Some of the reconstruction aides were accepted because of their experience in civil life as medical social welfare workers.

The director of the subsection of physio-therapy in the office was able, by the exercise of much energy and by inducing men and women to take intensive training in practical application of physio-therapy, to secure a sufficient personnel to carry on the administration of physio-therapy in the office and in each hospital.

Civilian employees were accepted in this service, designated as Reconstruction Aides in Physio-therapy, who were fundamentally qualified for the work because of previous education, supplemented by intensive training in schools and hospitals, to practically qualify them to give massage, local baths, thermo-therapy, and other forms of physical treatment.

Recreation in the form of exercise in gymnasia and in outdoor games was secured through the American Red Cross, co-operating with the Y. M. C. A., the Knights of Columbus, the Jewish Welfare Board, and in the convalescent centers with the commission on training camp activities of the War Department.

Facilities for the application of curative work, physio-therapy, and recreation in each of the military hospitals functioning in physical reconstruction was secured by the construction of new buildings, or by the alteration of existing buildings, and gardens and lands were secured by purchase or lease for the training of the men in outdoor pursuits or for playground purposes.

The equipment for work shops and for physio-therapy was secured as rapidly as the conditions due to the governmental war program permitted. The American Library Association co-operated in furnishing desirable text books and light and heavy literature for the use of the disabled men. The division of physical reconstruction, co-operating with the Federal Board for Vocational Education, prepared courses of study embracing fifty different educational subjects and trades as guides for the disabled soldiers and for the teachers in the application of the curative work shop schedule.

The need of the education of the disabled soldiers and of the general public as to the value of the application of curative work in the treatment of the disabled soldiers was met by the publication and circulation of circulars, pamphlets, and the magazine *Carry On*, by the Surgeon General co-operating with the American Red Cross Institute for the Crippled.

The application of occupational therapy and of physio-therapy in the treatment of sick and wounded disabled soldiers has proved of the greatest value in the earlier and more certain cure of patients. The primary application of work in the wards served as a diversion by arousing the interest of the patient and by distracting him from a contemplation of his disability. In the earlier stages of the work, the schedule of ward work consisted of the simpler arts and hand crafts. As the work progressed it was found that the interest of the patient was more readily aroused by work that was prevocational or even vocational in character, because it prepared him for the occupation he would follow after his discharge from the army. Through an understanding with the Federal Board for Vocational Education, it was agreed that the disabled soldier who remained in the hospital for a period too short to receive complete vocational training would have this primary vocational training supplemented by continued training in the same vocation by the Federal Board after his discharge.

At U. S. Army General Hospital No. 11, Cape May, an efficient school for the disabled soldiers with deafness and defects of speech successfully teaches lip reading and correction of speech defects. The patients receive prevocational or vocational training.

At General Hospital No. 7, Roland Park, Baltimore, there was established a school for blind or near blind soldiers, sailors, and marines. The blinded man is taught how to dress, feed himself, and get about as an independent individual, and at the same time instruction is given in Braille, typewriting, and coincident training in occupations suitable for the blind.

The disabled tuberculosis soldiers are treated in military sanitaria. Curative work has been established in each one of these institutions. Curative work for the tuberculous soldiers is modified to meet the varying clinical conditions of that disease and is applied under constant watchful medical supervision. Curative work has proved of the greatest value to the tuberculous patient in the prevention of hospitalization, and is especially valuable in the treatment of the convalescent in the production of the final hardening process which is so valuable in the prevention of relapse when the stage of inactivity of the disease has been secured.

In the application of curative work in the treatment of the disabled soldiers, it has been the constant endeavor to secure the co-operation of the ward surgeons and the educational personnel. It is recognized that the justification of the adoption of work as a therapeutic agent involves control of its application by the surgeon and physician; that while the educational officer may evolve kinds of work which involve definite muscular movements, it is the surgeon or physician who must indicate the particular functions to be restored and to prescribe the doses of work, the time it is to be given, and the frequency of its repetition. It is recognized that the same co-operation is necessary between the clinical staff and the director and his personnel in the application of physio-therapy.

Previous to the signing of the armistice, the disposal of the disabled soldiers after as complete recovery as the nature of the disability permitted was: (a) returned to general military service, (b) returned to special or limited military service, (c) discharge from the army.

Those unfit for further military service were, under the law enacted by Congress and approved by the President on June 27, 1918, turned over to the Federal Board for Vocational Education for further training and education.

Following the signing of the armistice, all disabled soldiers who enlisted subsequent to April 6, 1917, have been discharged from the army as soon as they have reached a maximum degree of recovery consistent with the nature of the disability. Consequently, the medical department of the army has not been justified in retaining the disabled sick and wounded soldiers in the hospitals beyond the period of time necessary for complete treatment. The curative work shop schedule has been applied just as fully, but the percentage of disabled soldiers who have received vocational training is necessarily comparatively smaller than previous to the signing of the armistice.

With the established policy of co-operation, the representatives of the Federal Board have been able to interview disabled men in the hospitals, to give them vocational guidance and to aid the educational officers of the hospitals in the choice of vocational work to be applied as a curative measure in the treatment of the soldiers while in the hospital.

Recognizing the great benefit which complete vocational training will be to the soldier so disabled by sickness or wounds that he is unable to follow a gainful occupation, the representatives of the Surgeon General in the various hospitals have wholeheartedly co-operated with the Federal Board in the effort to induce the disabled men to take advantage of the opportunity offered by the government for training and education after discharge from the army.

After active warfare ceased, disabled soldiers from the A. E. F. were returned to the United States in large numbers. It, therefore, became necessary to amplify the number of hospitals with facilities for physical reconstruction in this country. With the approval of the General Staff, the Surgeon General designated a larger number of general and base hospitals which should function in physical reconstruction.

The problem of supplying the necessary personnel, available room for shops, adequate school rooms, space for physio-therapy, gymnasia and required equipment was satisfactorily met.

Following the cessation of hostilities and the more rapid return of disabled soldiers from the A. E. F. to the United States, convalescent centers were established by the General Staff in nineteen of the training camps of the country. To these centers were sent convalescent detachments from overseas and convalescents from the general and base hospitals on a duty status. The final hardening process before discharge of the soldiers in the convalescent centers was brought about by the application of curative work, military drill, setting up exercises, and recreational play.

The responsibility for the application of measures for physical reconstruction for the treatment of disabled men in the A. E. F. was placed upon the Chief Surgeon of the overseas forces. The office of the Surgeon General, however, was able to co-operate with the medical department of the A. E. F. and furnished qualified women as reconstruction aides in occupational therapy and physio-therapy, who from all accounts gave a most satisfactory service in the treatment of the disabled soldiers in the United States hospitals in France.

It may be confidently stated that the application of curative work of standardized physiotherapy and of well directed recreational play in the treatment of the disabled soldiers has been justified by the known results.

It is the uniform testimony that the application of curative work and of play has resulted in the establishment of a better morale and a better discipline of the patients, of the enlisted personnel and of the officers engaged in the treatment of the disabled men.

Physical reconstruction is a new departure in the treatment of disabled soldiers in the United States army. With a small beginning, it has grown into a large activity of the medical department of the army. The following statistical summary is presented as evidence of the importance and of the practicability of physical reconstruction in the treatment of disabled men.

In interpreting the following tables it should be noted that all Reconstruction Hospitals were not reporting during all months; for instance, 23 Reconstruction Hospitals reported in December. Also the Base Hospitals did not open until January, consequently only a few reported for that month. Therefore, in many instances, the figures should undoubtedly be larger.

	1918.	1919.		
	Dec.	Jan.	Feb.	Mar.
Patients registered in hospitals	23,455	28,023	63,428	74,946
Patients taking Educational Work	5,292	8,167	16,296	24,969
Average per cent enrolled (based on entire population)	23	29	26	33
Probable per cent of men eligible to Educational Service	50	50	50	50
Per cent of men enrolled (based on number eligible)	45	57	51	67

The following items are combined monthly totals up to March 31, 1919, and represent Physical Reconstruction hospitals from which Educational Service Reports have been received.

Total patients registered	271,601
Approximate patients eligible to Educational Service	135,801
Total patients enrolled in Educational Work	74,946
Total enrollments (ward, shop and school)	139,486
Probable average per cent of patients reached by Educational Service	55

All patients in the various Reconstruction Hospitals are not eligible to the Educational Service for some one of the following reasons:

(1) Short-time patients (seven days or less). These patients simply pass through the hospitals as a part of the process of demobilization.

(2) Contagious wards in which workers are excluded.

(3) Patients severely ill and secondary surgical cases who are unable and too weak to work.

(4) Psychopathic cases of a character which make work impossible.

(5) Patients on furlough, absent from hospital and A.W.O.L., but carried on hospital population.

For administrative reasons it has not been deemed worth while to develop elaborate accounting systems to separate these cases from the hospital population. It is probable that in general these classes of ineligibles in Base Hospitals are extremely large. Therefore, estimating that from 50 to 60 per cent of available or eligible patients have been reached is a conservative estimate.

TYPES OF CASES IN EDUCATIONAL SERVICE.

The types of cases of disability showing the greatest number of enrollments are:

Orthopedic	5,016
Pulmonary Tuberculosis	3,139
Disability due to wounds	1,689
Amputation	1,125
Wound or injury of Nervous System	837
Functional Neurosis	730
Eye, Ear, Nose & Throat	536
Insanity	536
Gassed	323
Cardio-vascular	313
Arthritis	246
Nephritis	199
Gastro-intestinal	154
Severe Injury to Face and Jaw	120
Venereal Disease	68
Skin Diseases	66
Blindness	64
Deafness	34
Neurasthenia	32
Speech Defect	6
Paralysis	2
Other General Medical	1,326
Other General Surgical	1,567
Convalescent	1,610

CURATIVE WORK SCHEDULE SERVICE REPORTS FOR MARCH, 1919.

The data for the following summary are based on the Education Service Reports submitted by forty-four (44) hospitals designated to function in Physical Reconstruction.

The hospitals submitting reports are as follows:

GENERAL HOSPITALS.

Walter Reed, Takoma Park, D. C.
Letterman, San Francisco, Cal.
Ft. Bayard, N. Mexico.
No. 2, Ft. McHenry, Md.
No. 3, Rahway, N. J.
No. 4, Ft. Porter, N. Y.
No. 6, Ft. McPherson, Ga.
No. 7, Roland Park, Md.
No. 8, Otisville, N. Y.
No. 9, Lakewood, N. J.
No. 10, Boston, Mass.
No. 11, Cape May, N. J.
No. 16, New Haven, Conn.
No. 19, Oteen, N. C.
No. 20, Whipple Barracks, Ariz.
No. 21, Denver, Colo.
No. 24, Parkview, Pa.
No. 26, Ft. Des Moines, Iowa.
No. 28, Ft. Sheridan, Ill.
No. 29, Ft. Snelling, Minn.
No. 30, Plattsburg B'ks, N. Y.
No. 31, Carlisle, Pa.
No. 36, Detroit, Mich.
No. 38, Eastview, N. Y.
No. 14, Oglethorpe, Ga.

BASE HOSPITALS.

Ft. Sam Houston, Texas.
Ft. Riley, Kansas.
Camp Custer, Mich.
Camp Devens, Mass.
Camp Dodge, Ia.
Camp Gordon, Ga.
Camp Grant, Ill.
Camp Jackson, S. C.
Camp Kearney, Cal.
Camp Dix, N. J.
Camp Lee, Va.
Camp Lewis, Wash.
Camp Meade, Md.
Camp Mills, L. I., N. Y.
Camp Sherman, Ohio.
Camp Travis, Texas.
Camp Upton, L.I., N.Y.
Camp Taylor, Ky.
Camp Pike, Ark.

STAFF.

The educational staff for March (2,321) shows an increase of 494 over that of February (1,827). Three additional hospitals functioning in reconstruction reported for March. Excluding duplicates the figures for the Educational Staff for the past four months are as follows:

	Dec.	Jan.	Feb.	Mar.
Commissioned Officers.......	102	125	210	270
Non-Com. "	286	359	426	527
Enlisted Men	409	322	383	361
Reconstruction Aides	299	398	715	1,070
Other Civilian Employees				
Men	29	35	67	78
Women	9	16	24	15
Total	1,134	1,255	1,827	2,321

PATIENTS.

The number of patients registered and dismissed in the past four months from the hospitals submitting Education Service Reports is as follows:

	Dec. 1918	Jan.	Feb.	Mar. 1919
Number of patients on 1st of month	15,352	17,795	33,675	36,018
New admissions	8,103	10,228	31,347	34,852
Total	23,455	28,023	65,022	73,319
Number of patients S. C. D.	1,065	635	1,473	1,897
Number of patients returned to duty........	3,605	2,046	21,278	24,101
Number of patients transferred	2,157	1,894	2,474	3,224
Number of patients returned for discharge.	....	....	4,180	1,897
Number of patients died, deserted, etc.	895	3,160	2,142	2,153
Total	7,722	7,735	31,547	32,069
Number of patients at end of month	15,733	20,929	33,475	37,717

Of the total number of patients receiving S. C. D. (5,070), approximately 41 have been designated as hopeless or institutional cases; 510 have been reported as in need of further training, while 4,519 were able to resume their old occupation or were not in need of retraining.

WARD WORK.

Work in the wards is divided into Ward Handcrafts and Ward Academic Work. The figures for the number of enrollments in all Educational Work comprise the number of enrollments on the first of the month plus admissions during the month. This method aims to give full credit to the hospital for its Educational Work.

Work in the Wards for March shows an increase over that of the preceding months. The increase in enrollments and the increased demand for instructors emphasizes the value of this work. The enrollments for Ward Handcrafts are as follows:

	Dec.	Jan.	Feb.	Mar.
Work with textiles (knitting, weaving, etc.).....	991	2,413	3,612	4,786
Wood working (carving, toys, etc.)	550	941	1,808	2,439
Reed, cane and fiber work	534	897	1,555	2,596
Work in applied pattern (lettering, etc.)	271	210	284	282
Metal work (jewelry, etc.)	204	489	1,124	2,363
Leather, cardboard and binding	66	374	651	1,233
Work in plastic materials (pottery, etc.)	50	298	362	446
Unclassified enrollments	1,251	....	796	1,650
Total Handcrafts..	3,917	5,622	10,192	15,795
Total Academic (see below)	569	972	1,521	3,194

The subjects and enrollments in Ward Academic for March are listed:

Typewriting	440	Drafting	47
Arithmetic	352	Braille Reading	45
English	336	French	43
Reading	322	Telegraphy	23
Spelling	223	Lip-reading	16
Penmanship	208	Salesmanship	13
Shorthand	190	Speech Correction	6
Drawing	186	Italian	6
Music	81	Science	5
Higher Mathematics...	68	Advertising	3
Business English	62	Geography	3
Bookkeeping	60	Commercial Law	2
Spanish	51	Civil Service	2
Agriculture (study)..	48	Latin	1

Unclassified 352
Total Ward Academic 3,194
Total Ward Work, including Handcrafts...... 18,989

SCHOOL AND SHOP.

The work in the shop and school has been divided into three divisions according to the Educational Officer's Handbook, namely:

I. General Courses, which include academic and professional subjects.
II. Technical Courses, which include
  (a) Shop and Trade Courses, *e. g.*, Electrician, Machinist, etc.
  (b) Commercial, *e. g.*, Typewriting, Shorthand, etc.
  (c) Agriculture, *e. g.*, Gardening, Crop Study, etc.
III. Recreational Courses, which include drill, physical culture, etc., *prescribed by the Ward Surgeon.*

NOTE—In giving enrollments and individuals enrolled in Recreational Courses should be included only courses prescribed for curative value, not voluntary activities.

The enrollment in shop and school subjects as classified above for the past four months is given as follows:

	Dec.	Jan.	Feb.	Mar.
I. General Courses	2,439	3,168	5,845	7,045
II. Technical Courses:				
(a) Shop and Trade.	2,010	2,973	4,611	7,018
(b) Commercial	1,117	2,013	3,276	4,713
(c) Agricultural	564	808	1,027	1,583
Total a, b, and c....	3,691	5,794	8,914	13.314
III. Recreational Courses.	1,633	2.616	3,261	5,569
Total	7,763	11.578	18,020	25,928
Total including Ward Work	12,249	18,172	29,733	44,917
Number dropped during month	4.435	5,695	8,986	15.636
Total at end of month....	7,814	12,477	20,747	29,281

Medical Society of the State of New York

Important Notice

Physicians who have recently been discharged from the army, or expect to be discharged in the near future, are earnestly requested to send their new addresses to the Medical Society of the State of New York, 17 West 43d Street, so that they may be inserted in the Medical Directory which will be published in the early autumn.

District Branch Meetings

Annual Meetings for 1919.

First District Branch—Wednesday, October 15th, at Yonkers.

Second District Branch—Monday, November 3d, at Brooklyn.

Third District Branch—Thursday, October 9th, at Albany.

Fourth District Branch—

Fifth District Branch—Wednesday, October 1st, at Rome.

Sixth District Branch—Tuesday, October 7th, at Owego.

Seventh District Branch—Thursday, October 2d, at Rochester.

Eighth District Branch—Wednesday, September 3d, at Buffalo.

EIGHTH DISTRICT BRANCH

Fourteenth Annual Meeting, Buffalo, N. Y.

Wednesday, September 3, 1919.

Provisional Program.

The Eighth District Branch will hold its Annual Meeting in Buffalo on Wednesday, September the third. The meeting will be called to order promptly at 10 A. M.

The exact location will be printed in the final programs that later are to be sent to the members. Attention is directed to the provisional program which endeavors to bring to the physician the pros and cons in regard to State Compulsory Health Insurance, a question that today is of such vast importance to the profession. While great emphasis is put upon health insurance strictly medical subjects are not ignored. The subject of annual registration also finds a place.

"Social Responsibility of the Doctor," Presidential address, Albert T. Lytle, M.D., Buffalo.

"Factors Influencing Results in Surgery," William D. Johnson, M.D., Batavia.

"Diseases of the Pelvic Colon," S. Mortimer Hill, M.D., New York City.

"Blood Therapy," W. Warren Britt, M.D., Tonawanda.

"In France with the A. E. F.," George W. Cottis, M.D., Jamestown.

State Compulsory Health Insurance;
Hon. Frederick M. Davenport, Clinton, Senator for the State of New York.
Hon. Robert J. Caldwell, New York City, Special U. S. Industrial Commissioner.
Hon. James M. Lynch, Syracuse, Chairman New York State Industrial Commission.
Mr. M. H. Alexander, Boston, Mass., National Industrial Conference Board.
Henry T. Noyes, M.D., Rochester, National Association of Manufacturers of the U. S. A.
Edward J. Barcalo, M.D., Buffalo, Manufacturer.
Asher A. Landon, M.D., Buffalo, Manufacturer.
John H. Pryor, M.D., Buffalo.
Earl P. Lothrop, M.D., Buffalo.
John V. Woodruff, M.D., Buffalo.
And several real work people.

"Annual Registration," Hon. Augustus S. Downing, Ph.D., Albany, Assistant Commissioner of Education for the State of New York.

County Societies

MEDICAL SOCIETY OF THE COUNTY OF ERIE.

Regular Meeting, Buffalo, N. Y., June 30, 1919.

In the absence of the President and the Vice-Presidents the afternoon session was called to order by the Secretary, Dr. Gram. On motion of Dr. Edward Clark, Dr. A. H. Briggs was appointed temporary presiding officer.

The Secretary stated that the minutes of the regular meeting held on April 21, and the special meeting on May 2, had been published in the State Journal, but that in the minutes of the April 21st meeting there should be a correction made in the report of Dr. Woodruff, Chairman Committee on Economics, as follows: That the Committee recommend the formation of a society to be composed of doctors, dentists, nurses and pharmacists for the purpose of fighting the proposed health insurance, as it has been contemplated so far, and also for the protection of the allied professions and the public, and also recommend that the President appoint a Committee of Fifteen to confer with similar committees from the other professions. With this correction the minutes were adopted.

The Secretary read the minutes of the Council meetings of April 27 and May 27, which were approved as read.

Dr. Jacobs, Chairman Committee on Membership, presented the application for membership of Drs. V. A. Tyrasinski and Daniel Jung, and of Dr. J. A. Kiebela for reinstatement. On motion duly seconded and carried the doctors were declared elected.

The following amendment to the By-Laws proposed at the regular meeting was then taken from the table:

"Section I. Each member shall pay annually the sum of five (5) dollars which shall be due on the first day of January of the current year. At the same time he shall pay the amount of the per capita State Assessment fixed by the House of Delegates for the current year."

The Secretary stated that the reason for this increase in the dues was because the county society assessment had been found insufficient to meet the requirements for the proper running of the society and the Council had therefore recommended that the dues be increased, but had left the amount to the society to determine.

Dr. Richter moved that the amendment be adopted. After some discussion, the motion was lost.

Dr. Edward Clark then moved that the dues of the county society be increased one (1) dollar annually, making the County dues $3.00 instead of $2.00. The motion was carried unanimously.

On the arrival of the President, Dr. King, Dr. Briggs surrendered the chair to him and the society proceeded to the following clinical session:

Treatment of Syphilis.
(a) Wasserman reaction, its variation with clinic interpretation, Herbert H. Bauckus, M.D.

(b) Technique in proper administration of Salvarsan.
(c) Dangers and contra-indications.
(d) Other methods of treatment, Ernest Watson, M.D.

Gonorrhoea.
(a) Methods and technique in prophylaxis.
(b) Latest approved methods in treatment of acute gonorrhoea.
(c) Treatment of chronic gonorrhoea and its complications.

George E. Slotkin, M.D.

Each one of these subjects was presented in a masterly manner with an abundance of clinical material. The technique was carefully explained and the reasons given.

Shortly after 6 o'clock President King announced that through its President, Dr. Edward J. Meyer, the Buffalo City Hospital Commission had invited the Society to hold its evening meeting at the new City Hospital. The Society had also been invited by Dr. Meyer to be his guests at a dinner which he wished to give in honor of the event. Tables were spread in the large court yard of the hospital grounds and extensive decorations made the court yard look like a beautiful park. A full orchestra furnished the music. Over 300 physicians sat down to a dinner, which was one of the most enjoyable social events which the medical fraternity of Erie County has ever had, bringing together for social intercourse, as well as for scientific benefit, more physicians than had ever assembled at one time in Erie County.

After dinner Drs. Meyer, Goodale and their associates conducted the physicians through the various portions of the hospital.

After this inspection the physicians reassembled in the large auditorium and calls came from every side for Doctor Meyer who was conducted into the hall by a special committee consisting of Drs. Wende and Gram. Dr. Meyer made a brief address in which he thanked the members for responding to his request in such large numbers. He said that if the pleasure given them was as great as the pleasure given him the results would be 50—50. He also outlined the work of the hospital commission and the results so far accomplished together with what the commission still intended to do. Hearty cheers and a rousing vote of thanks followed his address.

Superintendent Goodale followed with a few brief supplementary remarks relative to the achievements of the hospital.

The evening program was then proceeded with and consisted of lantern demonstrations on "Methods Employed in Diagnosis of Lesions of Upper Urinary Tract," by James B. Cross, M.D., and "Differential Diagnosis of Syphilitic Skin Lesions," by Grover W. Wende, M.D.

A vote of thanks was tendered to all the members who presented clinic talks and demonstrations.

THE MEDICAL SOCIETY OF THE COUNTY OF ROCKLAND.

Quarterly Meeting, Piermont, N. Y.

Thursday, June 5, 1919.

The meeting was called to order at the Piermont Boat Club, at 2.30 P. M.

The Committee of the Rockland County Tuberculosis Hospital reported that the building was completed and the managers were buying the equipment. Dr. C. H. Restin of Liberty, had been appointed Secretary and Superintendent. A letter was read from Dr. Restin acknowledging a check from the Society for $150 toward the purchase of a microscope for the Institution.

Dr. Jesse Levene, of Spring Valley, was elected a member.

Dr. J. C. Dingman was appointed a committee to draft suitable resolutions on the death of Dr. Alexander Lyle, an honorary member of the Society.

Following the business session, Dr. John O. Polak, of Brooklyn, presented a paper on "The Treatment of Pelvic Inflammation in Women," which was most instructive, owing to the popular treatment by physicians of pelvic inflammation by the use of the curette. Dr. Polak condemned this practice and spoke of the necessity of providing vaginal drainage by incision and gauze packing in the cul-de-sac of Douglas in parametric infections following abortions of streptococcic origin. Dr. Polak advocated the method of the late Dr. W. R. Pryor.

The event of the day was the annual clam chowder collation at the Fort Comfort Pavilion, which was greatly enjoyed by the members of the Society and the guests present. Dr. George A. Leitner, of Piermont, acted as host.

MEDICAL SOCIETY OF THE COUNTY OF MONTGOMERY

Regular Meeting, Amsterdam, N. Y.

Thursday, June 26, 1919.

The meeting, which was held on the lawns of Dr. H. M. Hicks and Dr. C. F. Timmerman, was called to order at 9 P. M. Owing to the absence of the President, Dr. Hicks was appointed Chairman of the meeting.

After the transactions of the regular routine business, presentations of reports of committees, etc., the Society proceeded to the following

SCIENTIFIC SESSION.

"The Medical Department of the Line," Captain Elmer H. Ormsby, M.D., Amsterdam.

"Army Experiences," First Lieut. William H. Seward, M.D., Amsterdam.

"The Diagnostic and Therapeutic Aid of the Laboratory and Laboratory Products," James S. Walton, M.D., Amsterdam.

"Report of State Delegate," Richard R. Canna, M.D., Amsterdam.

"Glimpses of the American Medical Association at Atlantic City," Horace M. Hicks, M.D., Amsterdam.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

1918 Collected Papers of the Mayo Clinic. Rochester, Minn. Octavo 1196 pages, 442 illustrations. Philadelphia and London: W. B. Saunders Co., 1919. Cloth, $8.50 net.

The Medical Clinics of North America, May, 1919, Baltimore Number. Published Bi-monthly by W. B. Saunders Company.

The Nervous Heart: Its Nature, Causation, Prognosis and Treatment. By R. M. Wilson, Captain, R.A.M.C. Late Assistant to Sir James Mackenzie, under the Medical Research Committee. Cardiologist to French Fever Research and John H. Carroll, Major M.C., U.S.A., Specially Attached Trench Fever Committee, Assistant Visiting Physician, City Hospital, New York Instructor, Clinical Medicine, University and Bellevue Medical College. By the Oxford University Press, New York and London, 1919.

The Oxford Medicine. Advance Pages. Edited by Henry A. Christian, and Sir James Mackenzie. Volume I, Part 4. Oxford University Press, New York and London, 1919.

Psychoses of the War, Including Neurasthenia and Shell Shock. By H. C. Marr, Lt.-Col., R.A.M.C. (Temp.). Fellow Royal Faculty Physicians and Surgeons, Glasgow; Neurological Consultant Scottish Command; Physician Glasgow District Mental Hosp. Oxford University Press, 1919, New York and London, 1919.

Trench Fever. A Louse-Borne Disease. By Major W. Byam, R.A.M.C., Captains J. H. Carroll, U.S.R., J. H. Churchill, R.A.M.C. (T.), Lyn Dimond, R.A.M.C., V. E. Sorapure, R.A.M.C., R. M. Wilson, R.A.M.C. and L. L. Lloyd, R.A.M.C. (T.), Entomologist. With an Introduction by Lieut.-General Sir T. H. Goodwin, K.C.B. A Foreword by Major-General Sir David Bruce, K.C.B., F.R.S., A.M.S., and a Summary of the Report of the American Trench Fever Commission by Lieut. R. H. Vercoe, R.A.M.C. Oxford University Press, New York and London, 1919.

War Neuroses and Shell Shock. By Frederick W. Mott, M.D., LL.D., F.R.S., F.R.C.P.; Brevet Lt.-Col. R.A.M.C. (T.). With Preface by the Rt. Hon. Christopher Addison, M.P., Minister of Reconstruction. Oxford University Press, New York and London, 1919.

Surgical Aspects of Typhoid and Paratyphoid Fevers. By A. E. Webb-Johnson, D.S.O. With Foreword by Lieut.-General T. H. Goodwin, C.B., C.M.G., D.S.O. Oxford University Press. New York and London, 1919.

The Medical and Surgical Aspects of Aviation. By H. Graeme Anderson, M.B., Ch.B., F.R.C.S. With Chapters on Applied Physiology of Aviation by Martin Flack, M.A., M.B. And The Aero-Neuroses of War Pilots by Oliver H. Gotch, M.B., Ch.B., M.R.C.P. (London). And an Introduction by the Right Hon. The Lord Weir of Eastwood, P. C. London: Henry Frowde, Hodder & Stoughton, Oxford University Press, Warwick Square, E. C. 35 W. 32d St., N. Y. City, 1919.

Book Reviews

A Text-Book of Biology for Students in General, Medical and Technical Courses. By William Martin Smallwood, Ph.D. Third Edition, enlarged and thoroughly revised. Octavo 306 pages; 235 illustrations, 8 plates. Philadelphia and New York, Lea & Febiger, 1918. Cloth, $3.00.

To appreciate this book it is necessary to read the preface in which the author states his purpose and plan; else one might find much omitted, if a physician or a laboratory worker. The pedagogic concept of passing to the unknown or obscure from the known and readily understood makes it especially valuable for younger or amateur students. To this latter class belong even many physicians who have forgotten much of their technical biology; for these Dr. Smallwood has presented this somewhat dark subject in a satisfying manner. The reviewer's daughter voices her college use of the book by one word: it's "great." The chapters on adaptation, disease, evolution, variation, heredity and eugenics are somewhat abridged yet sufficiently comprehensive to give that general information on these matters which a busy man can readily acquire and needs. The illustrations are not only well made but also well chosen; sufficiently large to show minute structure yet not padding; nor is the paper so heavy that the book is immoderately thick. The common type forms are studied—frog, worm, cray-fish and others—but not as individuals; rather, and properly, as means about which the essential facts of all life can be placed in their particular appropriateness, so that by use of the forms the whole is spread out before the student with due regard to the laws of learning. Of course all readers do not like biology as a study. It is a fascinating study, however, and made more so to those who do enjoy it by the author's clearness of style, and his wise omission and subordination of details which show his knowledge but would lead too far from the easy comprehension of a subject too often made thus unnecessarily abstruse. If one wanted to glance through it casually, the chapters on hydra and on biological factors in disease would likely be interesting. A. F. E.

Elementary Bacteriology and Protozoology for the Use of Nurses. By Herbert Fox, M.D. Third Edition, thoroughly revised. 12mo of 222 pages; 68 illustrations and 6 plates. Philadelphia and New York, Lea & Febiger, 1919. Cloth, $1.75.

The author of this little work, now appearing in its third edition, has succeeded admirably in the difficult task of eliminating what not to say in a bacteriology for nurses. He emphasizes what nurses most need to know—what bacteria are, how they act, how they enter and leave the body and practical methods of dealing with them from the nurses' point of view. There are brief descriptions of the most important pathogenic bacteria and protozoa and nothing about bacteriological technic and methods of differentiation which are unessential for nurses. This edition appears in a small, compact volume which is well printed and illustrated.

E. B. Smith.

The Newer Knowledge of Nutrition. The Use of Foods for the Preservation of Vitality and Health. By E. V. McCollum. School of Hygiene and Public Health, The Johns Hopkins University. Illustrated. Published by the Macmillan Co., New York, 1918. Price, $1.50.

This book of 195 pages contains the author's Thomas Clarence Cutter Lectures given at Harvard Medical School in 1918. These consist chiefly of a discussion of the results obtained by the author and his collaborators in animal feeding experiments, during the past few years, with selected diets in relation to growth and nutrition.

These experiments show that chemical composition, thermotic value, digestibility and palatability are not the only factors that determine the value of a food. A diet that satisfies all these requirements may utterly fail to properly nourish an animal when fed with it.

This is a new method of food analysis which the author calls the "biological analysis" and must in the future supplement our previously accepted standards of a proper diet.

During the past decade there has been carried on, especially in this country, a large number of these feeding experiments with a great variety of diets, and we now have made rapid progress in understanding the relation of certain foods to growth and nutrition. These experiments have shown that there are certain essential elements beyond the reach of a chemical analysis, which are necessary to promote growth and normal nutrition.

They have also shown that the requirements of all species of animals, including man, are practically the same. These experimental results thus have a bearing of supreme importance upon the health of the human race.

The author discusses the "vitamine" theory and the "deficiency diseases" and tuberculosis in relation to diet. He also throws considerable new light on the relation of the diet of the mother to infant mortality.

Anyone who wishes to inform himself on the subject of nutrition from the most recent standpoint should read this book. It is not a fad, but a discussion of the results obtained by scientific experiments carried on for many years, and is very readable and interesting. E. H. B.

THE EFFECT OF DIET ON ENDURANCE. By IRVING FISHER, Ph.D., Professor Political Economy, Yale College. Yale University Press, New Haven, Conn. and New York City. 1918. New and Revised Edition, 60c.

This small book of 55 pages is a new edition in book form, of the article published in 1907 in the "Transactions of the Connecticut Academy of Arts and Sciences." It is a description of the author's experiment with a "feeding squad" of eight young men, to determine the effects on diet and endurance which would follow from a strict obedience to taste-instinct, when this instinct was given a longer chance to act by prolonged mastication and attentive tasting as advocated by Mr. Horace Fletcher. The results of this experiment have been pretty widely published and there is nothing new in this edition to merit an extended mention here. E. H. B.

THE ELEMENTARY NERVOUS SYSTEM. By G. H. PARKER, Sc.D., Professor of Zoology, Harvard University. 229 pages. 53 illustrations. Philadelphia and London: J. B. Lippincott Co., 1919. 12mo. Cloth, $2.50. (Monographs on Experimental Biology.)

This work on experimental biology by G. H. Parker, Professor of Biology at Harvard, traces the development of the neuromuscular system as found in the lowest forms of animal life such as the sponges and coelenterates, up to the vertebrates. It is pointed out that the neuromuscular system probably did not originate primarily as a nervous structure, but first appeared as merely smooth muscle unassociated with nerves, which acts through direct stimulation from without. The next higher stage is represented by a receptor-effector system in which the sensory element consists of modified epithelial cells in the form of sensory patches which have a direct stimulating action upon the muscles. The various cell groups are connected by a "nerve-net" of fibrils which form among themselves a network of communication whereby impulses that arise from a few receptive cells may be transmitted to many cells instead of being limited to a restricted group. This elementary system is far from being even a simple central nervous system because of its diffusion; the nervous actions are uncentralized, and there is a tendency for any nervous impulse started up in it to spread throughout its whole extent. A true central nervous system must have in addition a central organ, or adjustor, which is not encountered in animal forms lower than the worms. In the concluding chapters of the book the author traces the development of the brain and cord in lower animals. F. C. E.

CLINICAL MICROSCOPY AND CHEMISTRY. By F. A. McJUNKIN, M.D., Professor of Pathology, Marquette University School of Medicine. Octavo volume 470 pages, 131 illustrations. Philadelphia and London: W. B. Saunders Co., 1919. Cloth, $3.50.

Professor McJunkin has ably and truthfully accomplished the task of presenting a book to laboratory workers that is meant for them., In his work he has given a complete, concise, and clear description of laboratory methods of examination, without trespassing on the fields of speculation or theory.

In the text is incorporated much original work that is perhaps, not as yet the common property of most laboratories. And perhaps, this incorporation has been made at the expense of procedures now in vogue.

Particular mention should be made of the author's work on the endothelial leucocyte, the emphasis laid upon the value and the technique of the blood culture, and upon his comments relative to laboratory personnel and routine.

As a whole, Clinical Microscopy and Chemistry by F. A. McJunkin is a valuable addition to our literary armamentarium and should prove of great aid to the practical laboratorian. MAX LEDERER.

THE SURGICAL CLINICS OF CHICAGO, Volume III, Number 2 (April, 1919). Octavo of 242 pages, 62 illustrations, Philadelphia and London: W. B. Saunders Company. 1919. Published Bi-Monthly: Price per year: Paper, $10.00; Cloth, $14.00.

The April number of the Surgical Clinics of Chicago contains reports from various clinics covering most of the branches of surgery. Dr. Bevan reviews the development of the operation for appendicitis in an interesting article. Treatment of the different fractures and their complications is presented by several of the operators. Congenital stenosis of the stomach is discussed and an appropriate operation is outlined. Brophy presents a case of harelip. Other articles on special subjects are well worth careful perusal.
E. W. S.

ESSENTIALS OF SURGERY. By ARCHIBALD L. MCDONALD, M.D. A Text-book of Surgery for student and graduate nurses and for those interested in the care of the sick. 46 illustrations. Published by J. B. Lippincott Co.: Philadelphia and London. 1919. $2 net. (Lippincott's Nursing Manuals.)

This book is prepared for the use of nurses in connection with their surgical courses. It covers the general principles of surgical diseases, as well as the pathological changes that accompany such diseases.

The parts of the book on the anatomy of the human body are concise and the illustrations are good. The author has wisely omitted lengthy discussions on symptoms, diagnosis and treatment. Tiresome elaborations on minor surgery, so common nowadays in our text-books, are also missing.

We consider the book one of the best of its kind that we have read. HARRY R. TARBOX.

RECONSTRUCTION THERAPY. By WILLIAM R. DUNTON, JR., M.D., Assistant Physician Sheppard and Enoch Pratt Hospital, Towson, Md.; Instructor in Psychiatry, Johns Hopkins University. 12mo. of 236 pages, 30 illustrations. Philadelphia and London: W. B. Saunders Co., 1919. Cloth, $1.50 net.

A book primarily addressed to the occupation director of a hospital and of real interest to the doctor. The lesson taught is this: the minds of our patients must be taken care of while in the hospital as well as their bodies. How little attention is given in our hospitals to keeping the minds of our patients fresh, active and clean, and of preparing them to take up their life-work again on their leaving.

The work is excellently arranged with a full bibliography attached. The duties of an Occupational Director are carefully defined and the relation of the position to that of the rest of the hospital staff well brought out. The need of instruction of the undergraduate nurses in this special work is considered and plainly shown. The chapter on prosthetic appliances is well illustrated and the chapter on physical education is particularly good.

The book is one to be brought to the attention of every hospital worker. J. C. R.

A TREATISE ON ORTHOPÆDIC SURGERY. By ROYAL WHITMAN, M.D., M.R.C.S., Eng., F.A.C.S. Sixth Edition, thoroughly revised. Octavo of 914 pages; 767 illustrations. Philadelphia and New York: Lea & Febiger, 1919. Cloth, $7.00.

This standard work on orthopædic surgery is now in its sixth edition, and consists of a volume of one thousand pages. As the book is an accepted classroom text, it is familiar to all practitioners of medicine and a general description is not needed.

In the present edition the general management of the work remains the same. There is added as a final chapter of fifty pages a treatise on military orthopædic surgery, in which is given the best work of American and European countries in this division of surgery. Here are given the military splints, traumatic surgery of nerves, treatment of amputations, artificial limbs, and a brief note on reconstruction.

Throughout the book there is an increasing tendency to give full quotations from other writers, describing details of technic and operative procedure.

The criticism of the book is that it is becoming too large for a text-book, a position it has held for years without a peer. J. C. R.

In Memoriam

ABRAHAM JACOBI

By Reginald Hall Sayre, M.D.

A great light in the medical profession has gone out. Abraham Jacobi is dead, but his spirit still lives, and his influence will be felt as long as children continue to be born and need medical care. Cast off by the country of his birth, which failed to recognize in his striving for improved conditions among its population the prophetic vision of the future and saw in it only destruction of the present, he came to this country with nothing but his inherent ability to aid him, and, starting at the bottom of the ladder, received every honor which it lay within the power of the medical profession to bestow, and reached a position of such eminence that the very country which cast him in prison for his revolutionary ideas as a young man, besought him repeatedly in his maturer years to return and accept a professorship in Berlin; but faithful to the land which had welcomed him when he was thrust out of his native country, he declined the glittering offer which would have necessitated his severing his allegiance to the land of his adoption.

It was most fitting that Dr. Jacobi's funeral ceremonies should be held in the Academy of Medicine, as its building is a monument to his wisdom and sagacity.

The Academy was very dear to Dr. Jacobi's heart, and to it he devoted an extraordinary amount of time and attention. It was through Dr. Jacobi and Dr. Loomis that the site on which the Academy now stands was purchased, and largely through his efforts that the money to erect the building was secured. Its interest was always foremost in his thoughts, and when, after serving two terms as President, and over twenty years as President of the Board of Trustees, he retired from the active management in its affairs, he still continued to be a constant attendant at any meeting of public importance, and his advice was always sought by those in direct control of the Institution.

As an officer of the Association for twenty years I was brought into very intimate contact with Dr. Jacobi, and realize more fully perhaps than anyone else how deeply his heart was wrapped up in the Institution, and how zealously he guarded it against any step which he thought might tend to its injury.

For many years Dr. Jacobi attended the meetings of all the various sections of the Academy and frequently took part in their discussions. What he had to say was always to the point and always worth listening to, and it was marvelous that one mind could be broad enough and one man have time enough to keep in touch with such a vast range of different topics and be intelligently informed on all.

Dr. Jacobi's learning was founded on a solid substratum of common sense, and he never allowed himself to be led astray by the fashionable medical novelty of the hour which is taken up for a time and lauded by the ignorant, only to be discarded after experience has failed to demonstrate the truth of the claims that have been made for it.

He felt that the physicians should do more than heal the sick, and by timely advice in regard to modes of life, point out how many of the preventable diseases might be avoided.

He had a large share in establishing the co-operation between the profession at large and the Board of Health, which became really effective for the first time during the threatened cholera epidemic in 1892.

His voice of warning was heard whenever he felt the city or country was menaced by any danger, and he felt that as a physician and a man of intelligence he owed a duty to the country in raising a voice of protest against evils, whether they were strictly medical or not; and as he never talked at random, his suggestions were always listened to with a weight seldom accorded to anyone.

Few doctors since the time of Benjamin Rush have had the influence in directing the thought that was exercised by Dr. Jacobi.

His style was epigrammatic and his nice distinction in the use of English terms was peculiar. Few people could say so much in a few words, or say it to so good effect.

He took great pride in the magnificent collection of medical monographs comprised in the Festschrift presented to him by his former pupils on the occasion of his 80th birthday and felt wonderful satisfaction in the fact that he had been instrumental in stimulating the interest of such a large number of celebrated men in the medical profession, as these men, one and all, felt and said that he had been a great inspiration to them in the prosecution of their labors.

Wherever he went he was surrounded by an eager throng listening to what he had to say, and at any large medical meeting his appearance on the platform was the signal for prolonged applause.

To the young men who showed ability he was most kind and generous, and many a prominent man in this city can trace his rise to the helpful aid of Dr. Jacobi.

The poor as well as the rich were welcome to his aid, and any little child that was sick and suffering called forth all the great depth of sympathy that was his.

His own grandchildren were his great delight, and no one who has seen him in his country home surrounded by them, as I have done, could fail to appreciate the great tenderness which filled his nature, and see why he naturally turned to the study of pediatrics.

We shall miss his wise advice, his kindly face, and his pleasant smile, but we rejoice that he was taken from us in full mental vigor, and that he, as it were, fell asleep amongst friends.

Deaths

Richard Ewell Brown, M.D., New York City, died June 14, 1919.

Herman Eichhorn, M.D., New York City, died July 12, 1919.

George H. Houghton, M.D., Albany, died June 15, 1919.

Abraham Jacobi, M.D., New York City, died July 10, 1919.

Edward Lindeman, M.D., New York City, died June 12, 1919.

John T. Nagle, M.D., New York City, died June 14, 1919.

Henry S. Oppenheimer, M.D., New York City, died July 5, 1919.

Nathaniel Bowditch Porter, M.D., Santa Barbara, died July 5, 1919.

Ralph H. Watkins, M.D., Wolcott, died June 18, 1919.

William C. Woolsey, M.D., Brooklyn, died June 24, 1919.

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

JOHN COWELL MAC EVITT, M.D., Editor
FLOYD MILFORD CRANDALL, M.D., Assistant Editor
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Vol. XIX. SEPTEMBER, 1919 No. 9

EDITORIAL DEPARTMENT

FUTURE MEETINGS OF THE STATE SOCIETY.

THE next regular meeting of the State Medical Society will be held in New York on March 23, 1920. The House of Delegates will meet on March 22d.

This early meeting is made necessary by conditions of the present year. The American Medical Association will hold its next Annual Meeting in New Orleans in the last week of April or the first week of May. This early date was dictated by the climatic conditions of New Orleans.

It is imperative that our Society hold its meeting before that of the American Medical Association, chiefly for the election of the delegates necessary to insure us full representation in the House of Delegates of the American Medical Association. Also, for the sake of our patrons of the commercial exhibit, it is necessary that sufficient time intervenes to enable them to attend both meetings if they desire.

The commercial exhibit is of great importance in insuring a successful meeting. While the financial feature is of importance, it is of much less moment than is the presenting of new products and inventions which will be of interest to the membership, particularly to the physicians of the more sparsely settled regions where instrument shops are less easily reached than in the cities.

The Special Meeting of the House of Delegates, ordered at the Syracuse Meeting, will be held at Albany on November 22d, after election, at which time the personnel of the Legislature will be known, as well as its political complexion. Two subjects, and two only, will be considered at that meeting—Compulsory Health Insurance, and the formation of a Bureau for Legislative Information.

Many questions are arising as to who will be the members of that House of Delegates in the fall. Most of these questions are easily answered.

Most of the county societies elect officers as well as delegates to serve for the calendar year succeeding their election. Therefore, all delegates elected for the year 1919, will be the delegates to sit in this Special Meeting. It should be clearly understood that this meeting in the autumn is not an adjourned meeting, and is no part of the regular meeting which met last May in Syracuse.

In certain societies, the officers and delegates assume office at once upon their election. It follows, therefore, that any delegate elected by such societies prior to the meeting of the House of Delegates, shall be the delegate to sit in the Special Meeting.

A point that has raised particular question and doubt has been regarding the alternates and substitutes who sat in the House of Delegates in Syracuse. The question is simple. They were selected for that particular time and had fulfilled their duties upon the adjournment of the House of Delegates in May. Their selection for that House does not confer upon them any rights to sit in the House of Delegates during the Special Meeting in November, or the regular meeting in March, unless reappointed to serve for their delegates. In other words, the roster of the Special Meeting will be made up for that meeting as the roster is made up for each annual meeting.

It may be repeated that the membership of the Special Meeting will consist of the delegates regularly elected by the constituent societies. In their absence or inability to serve, alternates or substitutes may be selected to act in their place.

It cannot be stated too emphatically that credentials are necessary for the seating of a member in the House of Delegates. The method of electing delegates varies in each constituent society, but one rule is necessary, that every certificate of membership must be signed by the Secretary or the President of that society. The State Secretary will refuse to accept any card or document as a credential unless signed by a responsible officer of a constituent society, and if in doubt will refer the question for decision to the House of Delegates.

The importance of the office of delegate is frequently underrated. Under the Constitution the House of Delegates is the legislative body of the Society and has within its charge the superintendence and control of the Society and its affairs. It is vested with great power and authority. It is, therefore, necessary that no question may be raised as to the legality of the seating of any delegate. In case of legal trouble, such a question might prove serious.

It is the determination of the State Secretary to insist upon legal methods in the selection of delegates, alternates, and substitutes, and in the preparation of credentials. The presentation of the credential card is desirable, but not imperative, provided the secretary of the constituent society has made an adequate and legal report upon the representatives of his society.

The State Secretary also wishes to draw attention to the following section which is a part of the By-Laws of constituent county societies: "No one shall be eligible for any office, or entitled to vote for any officer or delegate, who has not paid his dues and assessments for the current year."

F. M. C.

Many strange conditions have arisen since the demobilizing of our vast armies in Europe. The medical profession of this state sees an unprecedented condition in the return of medical officers, an army in itself. They are coming from other localities into New York State in large numbers. Many are visiting the Secretary's office every week to inquire about reciprocity and the steps necessary to enable them to practice here lawfully. They are mostly men in the prime of life and medical efficiency. The story of one after the other is similar. They have left former surroundings and broken their former ties, and realize that their practice is scattered and feel this an opportune time to make a change. New York State, particularly its cities and large towns, is very attractive to them. No other body of men could be more desirable. They should be received cordially and courteously. The county societies can reap great benefit by seeking them out and taking them into membership.

DIFFERENTIAL DIAGNOSIS IN STRICTURE AND CALCULUS OF THE URETER, WITH LANTERN ILLUSTRATIONS.*

By **GUY L. HUNNER, M.D., F.A.C.S.,**
BALTIMORE, MD.

It is with particular pleasure that I come back to a New York medical meeting to discuss the subject of ureteral stricture. Those of you who were present at the meeting of the New York Academy of Medicine in December, 1915, when I presented my first report on fifty cases of ureteral stricture (*New York Medical Journal,* 1916, July 1) will remember the healthy attitude of incredulity with which that communication was received.

Of my then reported fifty cases, about thirty-eight or forty had been accidentally stumbled upon in my first thirteen years of practice, and the remaining ten or twelve had been found during the two or three months in which I was preparing that report. In other words, I was just beginning to look for ureteral stricture, and I confidently assured my doubting friends that they would find them as often as I if they would but investigate.

In the three and one-half years since that time I have diagnosed and treated about 500 cases, and I have had the satisfaction of instructing or inspiring other men in different sections of the country to take up this work, and they have obtained similar results.

It has been a source of interest to receive letters from some of these men, saying they are finding so many cases that they doubt the accuracy of the technique. I have had the same doubts and misgivings many times in my own work, and it is only because of the satisfactory results to the patient that I am still firm in my belief in the accuracy of my conclusions.

There are still many problems to be worked out in connection with ureteral stricture, problems with which I have been unable to grapple because of sheer physical limitations. I have no suitable central place for doing my work, having it scattered in five different hospitals, no X-ray department, and no assistants to put on the various problems.

We should have a more systematic X-ray study of the effect of stricture on the upper ureter and kidney pelvis than I have been able to make. We should have careful studies of the working capacity of the separate kidneys in the case of monolateral stricture. Of more importance would be the studies of the total reduction of function in cases of bilateral stricture that had persisted long enough to cause injury to the kidneys, and studies of the extent to which function recovers after dilatation and relief of back pressure. There are other problems which need solution, but thus far I have been forced to merely confine my energies chiefly to the relief of the patient's symptoms.

My latest student, Dr. Turlington, of Birmingham, is now working on a problem I have long wished might be settled. He has undertaken to pass a 3½ mm. to 4 mm. bulb on 100 consecutive supposedly normal cases to see in how many such cases there will be obtained a hang of the wax bulb. So far as possible these will be patients who have never had a history of urinary tract trouble.

In spite of my shortcomings in ability, facilities and equipment I have had much satisfaction in this field, and I trust the younger men will be stimulated to undertake the problems yet to be solved.

In following the mere routine clinical work I have arrived at a few conclusions that I think will bear the test of time. I believe I have demonstrated that ureteral stricture is one of the commonest causes of abdominal symptoms in women.

Ureteral stricture is the cause of more kidney pathology (excluding conditions usually classified as medical) than any one factor. It accounts for the majority of hydronephrosis cases, and thus indirectly for many cases of floating or movable kidney, and of pyonephrosis. The majority of pyelitis cases have ureteral stricture and obstruction as a basis. Most cases of pyelitis of pregnancy and of the puerperium depend on stricture, as do many cases of pyelitis in children. Some cases of albuminuria and eclampsia leading to premature childbirth are due to stricture. Most cases of stone in the ureter and probably many cases of stone found in the kidney and bladder arise in an area of ureteral stricture. It is probable that urinary stasis due to stricture is the predisposing factor in many cases of stone arising in the kidney, and of recurring kidney stone after operation. Many, if not the majority, of the cases of so-called essential or ideopathic hematuria are due to ureteral stricture.

Finally, time and experience have amply verified my original theory that most cases of ureteral stricture and many cases of chronic urethritis are due to focal infections. (Hunner, "Chronic Urethritis and Chronic Ureteritis Caused by Tonsilitis," *Journal of the American Medical Association,* April 1, 1911, LVI, 937.)

We have taken for our discussion today just one small section of this broad subject, namely, the differential diagnosis between ureteral stricture and ureteral calculus.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 7, 1919.

The chief value of such a discussion lies in convincing the profession that the diagnosis cannot be made without special urological methods, and that operation is not justifiable until these methods have been employed in an effort to arrive at a correct diagnosis.

There are usually exceptions to dogmatic statements and one may admit at once that in certain cases with symptoms typical of stone in the ureter, one can easily palpate the stone through the vaginal or rectal route; or more rarely, in thin patients, a stone may be palpated in the abdominal portion of the ureter. One can never be certain in such cases, however, that he is not palpating a venous phlebolith in the lower pelvis or a calcified lumbar gland in a patient whose symptoms of renal colic are due not to this condition but to ureteral stricture.

How often the cock-sure and, alas, even the modest surgeon, spends an uncomfortable hour or two sweating in the search for the ureteral stone that is not present. Every surgeon with experience knows how difficult it is at times to locate a stone when present, and he will agree that it is not fair to subject the patient to the ordeal of a serious operation in making a differential diagnosis between ureteral stricture and stone when far simpler means are at hand.

One may admit also that there are rare instances in which life may be jeopardized by the delay necessary for special examinations. In the case of a patient with a past history of renal colic who is suddenly taken with a fresh attack and is going into coma, it might be our duty to make the diagnosis and relieve the situation by immediate operation. This would be particularly true in the case of a young or middle aged patient seen under circumstances that would not justify the delay in having an X-ray photograph, or an examination with the renal catheter.

If we admit the identity of signs and symptoms in patients suffering with stricture or stone, it becomes apparent that we must use special urological methods for a complete diagnosis.

We are indeed fortunate in having developed methods which have converted an intricate field of surgical diagnosis into one of the most accurate and scientific branches of the medical art.

While I am an enthusiast over the use of the cystoscope, the renal catheter, and the Roentgen ray, and believe that no surgeon is justified in operating on questionable lesions of the upper urinary tract without first giving the patient the advantages of the use of these methods of diagnostic precision, I wish, before illustrating some of the points to be gained by their use, to emphasize first the importance in all urinary surgery of the older methods of diagnosis.

Scientific surgery of the urinary tract demands first of all a careful anamnesis, physical examination, and urinalysis. I never expect to reach the point in my surgical work in which I shall be satisfied to operate without the knowledge to be gained by the supremely important first-hand information to be obtained from these older methods.

For the benefit of the modern hospital interne and resident who is prone to grumble over his one to five years of history taking and urinalysis, it may be of service to know that the few contributions I have made to the advancement of urology have all been founded on the persistent following of this old-fashioned road of drudgery and attention to the minute details of each individual patient.

It may be profitable to summarize briefly the usual routine followed in arriving at a diagnosis between ureteral stricture and calculus.

Anamnesis.—The chief point to bear in mind is that from the history alone one cannot differentiate between ureteral stricture and calculus. Given the typical history with which we have been taught to associate the diagnosis of ureteral stone, and without further data it is about as safe to make a diagnosis of stricture as of calculus, because stricture is by far the more common disease.

The renal colic, the pain down the ureteral line, the bladder frequency or even tenesmus, the rectal tenesmus, the gastro-intestinal symptoms of nausea and vomiting, meteorism, stasis, and the various referred pains in the back, sacrum, rectum, urethra, perineum, hip, and down the leg—all these symptoms, so frequently found with ureteral calculus, are not infrequently associated with ureteral stricture.

It must be remembered that either a stricture or a stone may be present for years without causing renal colic. In either condition there may be only a mild discomfort which the patient distinctly states cannot be dignified as a pain. This discomfort or soreness may be localized at the site of the disease or it may spread to the kidney region. It may be constant or intermittent, occurring at intervals of hours, days, weeks, or months. On the other hand, stone or stricture may be present without local soreness or pain except when the renal colic occurs, and this may be only at long intervals. (See Fig. 1.)

The temperature in patients suffering with renal colic due to stricture or stone may be altered much, little, or not at all. Chills may occur with the colic due to stone or stricture. Elevation of temperature may be present only at the time of the colic, or it may be present with the more or less dull, steady pain and soreness and last for days. I have seen temperatures of 103° to 104° due to obstruction from stricture without the presence of infection, but do not recall having seen a case with chills in either stone or stricture obstruction in the absence of infection.

If a patient gives a history of having passed a ureteral stone but still has a continuance or reawakening of symptoms characteristic of stone, we must always think of the persistence of a ureteral stricture in which the stone was formed. (See Fig. 2.)

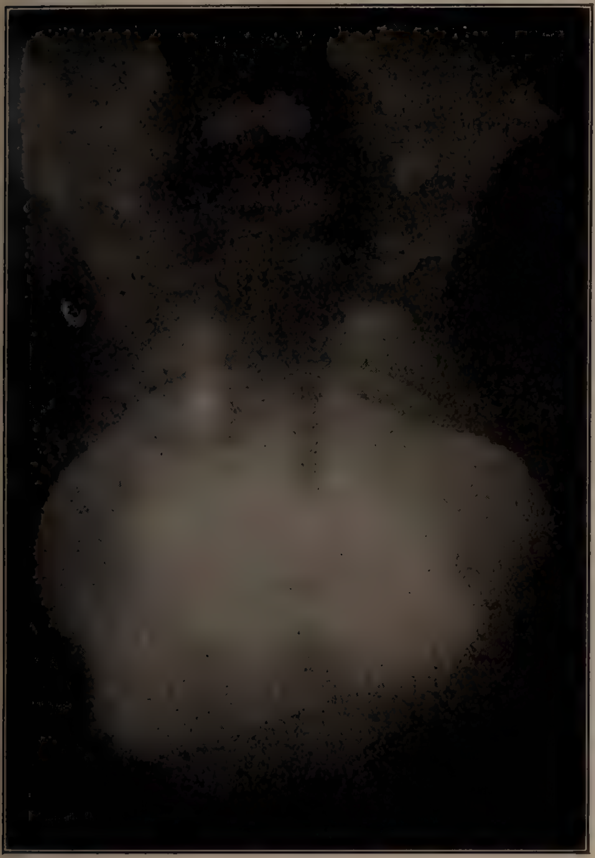

FIGURE 1.—Illustrating patient with bilateral stricture and stone on the left side. An interval of 17 months between attacks due to stricture on the right.

Miss K., aged 20 years, referred by Dr. William T. Watson in October, 1918. In October, 1917, a badly inflamed appendix was removed. During convalescence a sharp attack of right side pain was interpreted as due to ureteral stone. X-rays were negative.

In June, September, and October, 1918, three severe attacks of renal colic on the left side. Dr. Watson had X-rays taken and these were negative. Wax-tipped and wax-bulbed renal catheter passed to relieve probable stricture, met two obstructions in left ureter, one 7 cm. and one 2 cm. above the bladder, and the wax tip and bulb were both deeply gouged as if by stone.

This X-ray then taken at an angle to picture a stone lying anterior to the sacro-iliac joint.

Operation March 5, 1919, after a severe colic, and the stone removed from the broad ligament stricture to which it had descended.

The patient left the hospital March 25th and during that night had a second severe colic attack on the right side, this being the first right side attack since October, 1917, immediately following her appendicitis operation.

Investigation revealed a ureteral stricture in the right broad ligament region and a hydronephrosis of 18 cc. This plate is reversed.

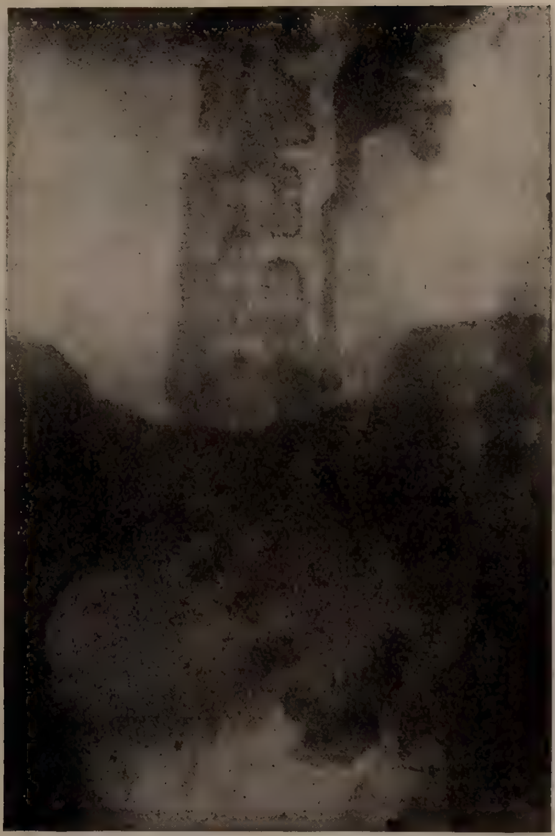

FIGURE 2.—Illustrating ureteral stricture and hydronephrosis causing symptoms after the passage of a stone.

Patient, aged 47 years, had passed a navy-bean-sized ureteral stone five years previously. Complained chiefly of pain in the left flank and pressure in the rectum. Failure of catheter to go beyond the pelvic brim region at first examination. Successful catheterization at all later attempts and dilatation of a stricture just below the pelvic brim with the wax bulb. Rapid shrinkage of pelvis of the kidney from 28 to 10 cubic centimeters and relief of symptoms. Observation five months later; pelvis of kidney held 10 cubic centimeters.

If a patient has passed a stone from one ureter and later complains of symptoms suggestive of stone in the opposite side, the probable diagnosis is stricture, although of course a stone may be found in this stricture.

Physical Examination.—In our effort to differentiate the two conditions, the local examination of the urinary tract by means of bimanual palpation may be negative, or it may result in positive findings which are helpful, or which may be misleading, and which, if not corrected by further studies, may result in useless operations.

It is rare in either stone or stricture cases that bimanual examination is negative. If the kidney can be palpated it is usually found more sensitive than normal. If infection or hydronephrosis be present, or if there has been a recent attack of colic, the kidney is more sensitive than usual and may be distinctly enlarged.

Palpation of the ureteral area beside the sacral promontory where the ureter crosses the pelvic brim, nearly always elicits pain, and the patient may complain of a referred pain up toward the kidney, and more often down toward the bladder with a desire to void.

If the stone or stricture be located in the upper pelvis in the region of the bifurcation of the internal iliac artery, the point of maximal tenderness is likely to be found on palpating just below the pelvic brim. These pain phenomena on the right side often lead to the diagnosis of appendicitis. Most strictures and most ureteral stones in women are found in the broad ligament region. Bimanual palpation through the vaginal vault in line with the ureter most often elicits the point of maximal tenderness, and the pain is not infrequently referred up toward the kidney, upward and outward toward the appendix, or the sigmoid, outward and back into the hips or sciatic region, or downward into the thigh. At times palpation of the diseased lower ureter brings on rectal pressure, and nearly always the desire to void. The trigonal region of the bladder is not infrequently implicated in the inflammatory process about the broad ligament region, and this will cause palpation of the bladder base to be painful. Patients with disease of the lower ureter, particularly if the trigonum is involved, often complain of dyspareunia, and it is this symptom, together with the above phenomena obtained on palpation of the broad ligament region, that leads to the diagnosis of "ovarian disease," or "pelvic inflammatory disease," and results in needless operations.

The periureteritis associated with stricture or stone can often be palpated as a wire-like thickening in line with the vesical and broad ligament portions of the ureter, and at times the local thickening about a stricture in the broad ligament region may be so gross as to feel like a stone; and if further studies are not made, the patient is submitted to a futile operation in the quest for stone.

Another fertile source of error when depending solely on the history, urinalysis, and palpation findings, is to mistake a phlebolith in the broad ligament region for a ureteral stone. This will be referred to later under the X-ray findings. Suffice it here to state that the same focal infection that has settled in the lymphatics of the broad ligament may probably cause an inflammation in the ureteral wall, followed by stricture, and an inflammation in the veins, followed by one or more phleboliths. Another finding on palpation which may be helpful or harmful, according to the completeness of our accessory studies, is the discovery of a stone in the region of the abdominal portions of the ureter. Cabot ("Errors in Diagnosis of Renal and Ureteral Calculus," *Surgery, Gynecology and Obstetrics,* XXI, 1915, 403) has shown us that such a stone may be a calcified tuberculous lumbar gland.

Urinalysis.—It goes without saying that in discussing urinalysis in women we always mean the examination of a specimen obtained from the bladder by catheterization.

The urinalysis does not help in differentiating between stricture and calculus disease of the ureter. Furthermore, the urinalysis may prove positively harmful to the patient, as it has often done in the past, when the finding of a normal urine has diverted the diagnostician from further investigation of the urinary tract and has led to some useless operation on some unoffending organ. If the patient is more fortunate, he or she is merely labeled a neurasthenic and set aside for rest-cures; or, rebelling at these, and justly feeling that legitimate medical science has failed, seeks relief in some of the numerous cults always ready to readjust a dislocated vertebra, or to convince the suffering that pain is a figment of mortal mind and to be treated as such.

The above dogmatic statements on the value of the urinalysis are intended to emphasize the necessity of more accurate observations in this field. Too often, on seeing a microscopically clear urine, the laboratory worker is hurried and careless in his microscopic work, and makes a negative report, whereas a more careful analysis would show an occasional erythrocyte or leukocyte, to indicate trouble somewhere in the urinary tract.

A patient with stricture or stone may show normal urine during the quiescent stage, whereas an examination during or just after a renal colic is very likely to reveal leukocytes or erythrocytes or both.

Formerly we were taught that calculus in the upper tract always caused blood in at least microscopic quantity. (Musser, "Renal Calculus," *The Philadelphia Medical Journal,* 1898, April 16.)

More recent observations of long series of cases of ureteral stone show that blood may be absent in from 14 per cent in 150 cases reported by Cabot (*Journal of the American Medical Association,* 1915, LXV, 1233) to 20 per cent in 294 cases reported by Braasch and Moore (*Journal of the American Medical Association,* 1915, LXV, 1234). In my second series of fifty cases of ureteral stricture (Hunner, "Ureteral Stricture, Report of One Hundred Cases," *Johns Hopkins Hospital Bulletin,* 1918, XXIX, 1) there were thirty-nine cases without urinary infection, and urine catheterized from the bladder in thirty-six of these cases showed erythrocytes in five cases, leukocytes in two cases, and both red and white cells in three cases. Twenty-six cases, or 75 per cent of those without infection, showed normal urine. With the presence of a ureteral stone in a stricture area we are

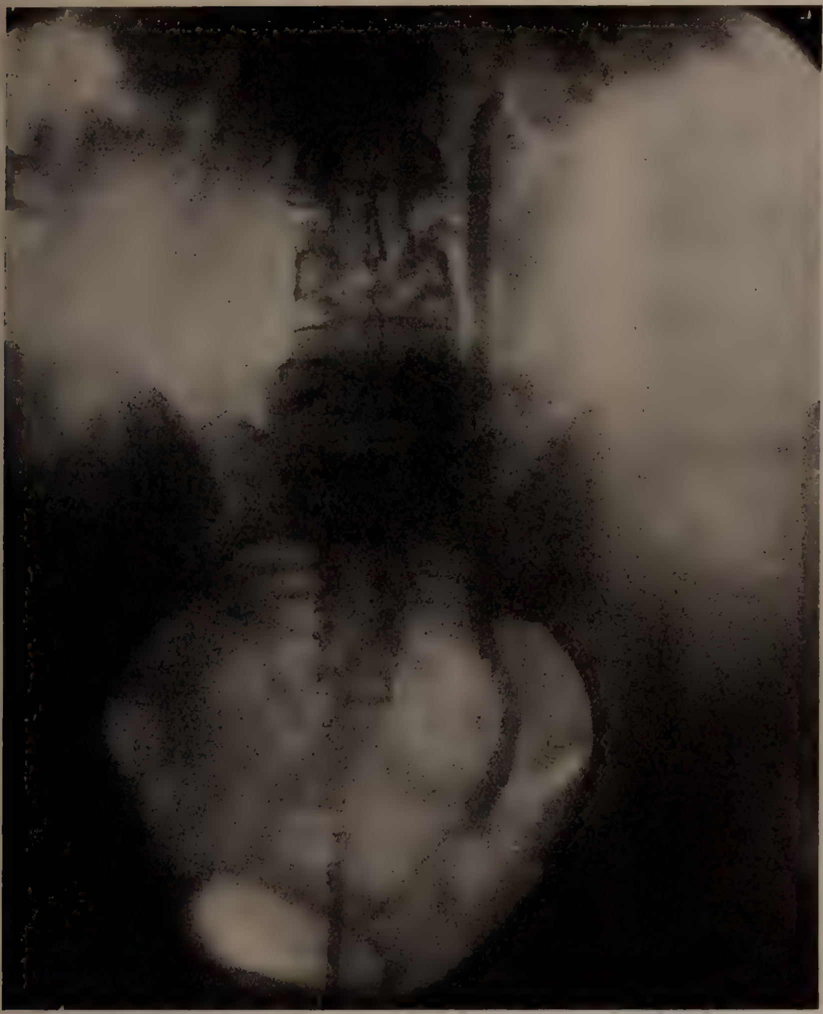

FIGURE 3.—To illustrate patient with ureteral stricture suffering with symptoms typical of calculus and with free hæmorrhage.

Mrs. R., aged 43, two attacks, December 20, 1915, and February 25, 1916, of symptoms typical of ureteral stone, each attack requiring repeated hypodermics of morphine. Great pain beginning in left groin and settling in left kidney region, then extending from kidney to bladder, and causing great frequency of voiding; great distension of bowels, nausea, and vomiting; rectal tenesmus and ineffective attempts to stool. Urine port-wine color, with blood, many leukocytes, negative to culture. Stricture 4 cm. from bladder; kidney holds 16 cc. Complete relief of symptoms after five dilatations. From J. H. Hospital Bulletin.

more likely to have ulceration and therefore blood. It is thus seen that the first dogmatic statement made above concerning the value of urinalysis in a differential diagnosis may be modified to the extent of saying that the presence of blood favors the diagnosis of stone. This is especially true if the case be in the quiescent, non-painful stage. During the stage of colic the ureteral stricture case may show as much blood as the case of stone. (See Fig. 3.)

Recently I have had a number of cases with severe hematuria apparently due to stricture and am confident that this fact is going to throw light on many cases of so-called essential or ideopathic hematuria. (See Fig. 4.) It is probable that the hemorrhage in some of these cases comes from an ulcer in the stricture area, while in others it may come from injury to the kidney due to the back pressure. In some of these cases of hematuria associated with stricture there are no symptoms; in others there is pain.

A few leukocytes may be found in the urine in the presence of either stricture or stone, even if there be no infection.

When a stricture or a stone is associated with infection we rarely find a pure bacilluria, but usually a bacilluria with pyuria, and with these some erythrocytes are often present. In cases of complete obstruction of the affected side, either from stone or stricture, there may be temporary absence of abnormal elements in the bladder urine.

Albumin may occur with stricture or stone and may be dependent on, or independent of, the presence of blood. In one case an albuminuria of long standing and severe grade and not associated with blood disappeared after dilation of the bilateral stricture.

From the above analysis it will be seen that our older methods of diagnosis should lead us to suspect stricture or stone in the urine in the majority of patients suffering with these diseases.

The limits of this paper do not permit the classification and discussion of the other lesions of the urinary tract or of the diseases of other organs that have too often been diagnosed and treated in error when these ureteral lesions should have been found and the patient relieved. The author has elsewhere made a fairly complete classification of such diseases.

Our failures in the past have not been due entirely to the limitations of the older methods of diagnosis, and I think we shall all confess that there has been hurried, faulty and careless use of the methods of anamnesis, physical examination and urinalysis.

Figure 4.—To illustrate patient with symptomless hematuria. Patient, aged 69, referred by Dr. Hardee Johnston, Birmingham, Ala., admitted to the Church Home and Infirmary May 18, 1917. Since April 5, 1917, she has had four attacks of hematuria, each attack lasting four days. There is no pain but a slight uneasy feeling in the right flank during the attacks. A renal catheter enters the right ureter only 3 to 4 centimeters. Thorium injection beyond catheter of 13 cubic centimeters. Later two successful dilatations of stricture 3 centimeters from the bladder. Report October 1, 1917, no further bleeding and no symptoms.

Our analysis shows, however, that with the most careful use of these methods we get no farther in most cases than to state that the patient's symptoms and physical findings point to a lesion of the urinary tract. To locate this lesion, to analyze its character, and to outline its best form of treatment, we are absolutely dependent in most cases on the newer methods of urological diagnosis.

These, in the order of their simplicity and freedom from annoyance to the patient, are: Roentgenography, cystoscopy and catheterization of the ureter with its various accessory methods of investigation, such as the bilateral functional test of the kidneys, the use of the wax tip, wax bulb and other instruments for locating and treating obstructions, and the use of shadowgraph materials combined with roentgenography.

Our recent medical literature is so replete with new and ingenious methods of urinary tract diagnosis that I shall not attempt their complete classification, but shall confine this paper to a report on the methods I find useful in my rather limited field of work on women.

Roentgenography.—A positive X-ray picture of a stone in the ureter is of great value for the diagnosis when a patient complains of symptoms and reveals signs pointing to a lesion in the urinary tract. A negative X-ray means nothing, but often proves worse than useless, because it stops further investigation of the urinary tract.

Omitting my first fifty cases of ureteral stricture occurring in my first thirteen years of practice in which stone in the urinary tract was present ten times, and considering about 500 cases of stricture diagnosed in the past three and a half years, since November, 1915, stone in the urinary tract has been found in approximately thirty-five cases.

We thus see a tremendous margin of error if we depend upon the unassisted roentgenogram to decide whether the symptoms are due to a urinary tract lesion. Add to this the admission of the expert roentgenologists that they miss from 15 to 30 per cent of ureteral stones. Consider also the point made when speaking of the physical examination, that the symptoms may be due to stricture while the X-ray may show phleboliths or calcified tuberculous glands in the ureteral region.

A patient may be suffering with symptoms due to stricture and the X-ray reveal a stone in the kidney or bladder. As shown in previous publications (Hunner, l. c. and "On the Etiology of Ureteral Calculus," *Surgery, Gynecology and Obstetrics,* 1918, XXVII, 252), such a stone may have originated in the stricture and subsequently floated upward to the kidney; or it may have been forced downward into the bladder. The importance of this observation is apparent to those surgeons who have removed a stone from the kidney only to be disappointed in having the patient continue with his original symptoms which subsequent X-rays fail to explain. (See Fig. 5.)

Cabot ("The Diagnosis of Stone in the Pelvic Portion of the Ureter," *Boston Medical and Surgical Journal,* 1910, CLXIII, 85) has called attention to the importance of having the roentgenograph taken at the proper angle to reveal ureteral stone lying in the upper pelvis just anterior to the sacro-iliac joint. (See Fig. 1.)

Cystoscopy.—The cystoscopic findings may or may not be helpful. Fenwick and others have shown meatoscopic pictures of the edematous reddened ureteral orifice region supposed to be diagnostic of ureteral calculus. In my experience the only cystoscopic picture diagnostic of ureteral stone is to see the stone just within the distended open orifice or partially extruding through the meatus.

The reddening, or reddening and edema, about the orifice, or these signs together with a slight polypoid projection near the orifice; are proof merely of an inflammatory condition in this region, and may be due to trigonitis or to some ureteral lesion, be it tuberculosis, stone, stricture, or some other cause of ureteritis. Tuberculosis may be present in the upper tract, or stricture or stone may exist very near the ureteral orifice without the slightest meatoscopic change observable through the cystoscope. Fig. 6 shows a stone which I discovered with the wax tip within two centimeters of the orifice when the catheter could be introduced but three centimeters and in which I had already made the note that neither ureteral orifice showed any congestion. A stricture will often be found within three centimeters of the orifice when meatoscopy is quite negative.

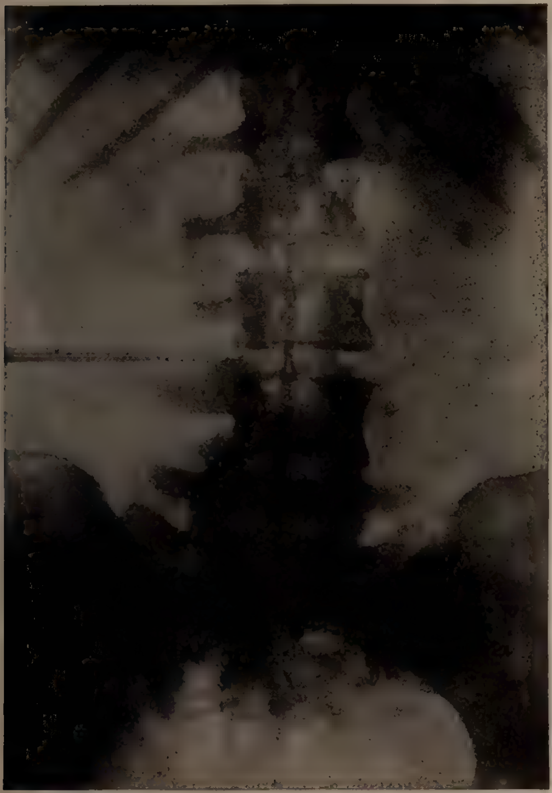

FIGURE 5.—Illustrating a patient with left kidney stone and symptoms due to a ureteral stricture.

The X-ray revealed a stone in the pelvis of the kidney. Investigation with the wax-tipped catheter accidentally led to the discovery of ureteral stricture 7 centimeters from the bladder, the kidney pelvis holding 8 cubic centimeters. Complete relief of symptoms after dilatation of the stricture, and the patient refused operation in spite of being shown the X-ray of her kidney stone. This case probably explains the occasional case seen by the surgeon in which pyelotomy for stone is followed by urine drainage for a disappointing length of time, and after healing the patient continues to have symptoms similar to those before complained of.

On the other hand, many cases of stricture in the broad ligament region show decided changes about the orifice, as do many of the cases with low lying stone.

In a few cases of ureteral stricture in the broad ligament region the inflammatory process seems to involve the entire region of the base of the bladder, or at least that portion of the bladder occupied by the trigonum.

I have a group of ureteral stricture cases in which the chief symptoms have been referred to the bladder, and in which the cystoscopy revealed an edematous, reddened trigonum. The ureteral mons region may or may not be particularly edematous and prominent. These patients have all had bilateral stricture and the history of great vesical distress, and the palpation and cystoscopic findings would seem to indicate an inflammatory process involving the base of the bladder and both broad ligament regions. The urine may be quite normal or contain leukocytes and erythrocytes.

The cystoscope may be of great value in ureteral diagnosis by demonstrating purulent or bloody urine coming from one or both ureteral orifices. Through the Kelly cystoscope the urine may be caught directly from the separate orifices for macroscopic and microscopic examination. We determine the presence of an abnormal number of ureteral orifices by the cystoscopic examination and may be able to estimate which section of a double kidney is diseased.

We conclude from the above that cystoscopy *per se* often gives us no clue in making a diagnosis of ureteral disease, and it seldom helps us in differentiating between stricture and stone in the ureter, but the finding by cystoscopy of a trigonitis or of a reddened ureteral orifice

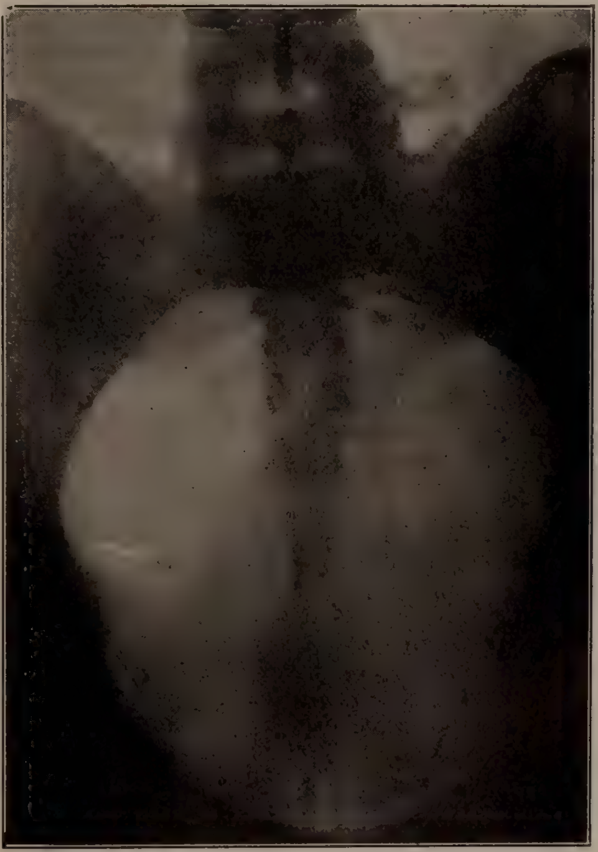

FIGURE 6.—Illustrating patient with a stone within 2 centimeters of the bladder and with no inflammatory reaction about the ureteral orifice.

Miss P., aged 22, suffering with a pain in the upper left quadrant, radiating down the anterior flank, and associated with too frequent voiding. An attack has accompanied each of the last two menstrual periods. The centrifuged bladder urine showed about a dozen leukocytes, no erythrocytes, no albumin.

region should make us think of the possibility of ureteral disease.

Catheterization.—The court of last resort in making a diagnosis between ureteral stricture and ureteral calculus is the renal catheter. The catheter unaided does not render a positive decision except in the rare case in which one can feel the grating of a stone as the catheter is introduced or withdrawn. In such cases one is led to examine the gum elastic material carefully and can see scratch marks on the catheter, which confirms the evidence gained through the grating sensation imparted by the catheter.

We must usually depend upon tipping the catheter with wax or upon using a shadowgraph catheter and the X-ray. Even these accessory helps will fail us in many cases unless the catheter is equipped with a wax bulb in addition to the wax tip. The wax bulb is well-nigh indispensable in making a diagnosis of stricture, and, as we have seen, the vast majority of the cases under discussion are stricture and not stone cases.

The unaided catheter may go to the kidney in either stone or stricture cases without appreciable obstruction. The wax-tipped catheter may go to the kidney with or without appreciable obstruction in the ureter and come back with scratch marks due to a kidney stone, while the patient's symptoms may all be due to ureteral stricture. The wax-tipped catheter may be permanently obstructed in the ureter by a stricture area surrounding a stone, and come back without scratch marks, because the lower end of the stricture is too dense to allow the wax tip to come in contact with the stone.

Any catheter may be obstructed permanently in a broad ligament stricture and yet the patient may still have a higher stricture area with or without a stone.

In case of permanent obstruction to the plain or wax-tipped catheter it is well at the next examination to use the duck-bill open-end shadowgraph catheter and to get an X-ray while distending the upper tract with a shadowgraph fluid. This will usually show a dilated ureter above the point of obstruction, whether this is due to stricture or stone; and in case a stone is present, the shadowgraph fluid will often make it visible even when a previous plain X-ray has been negative.

If an open-end shadowgraph catheter is obstructed in the broad ligament region, and the attempt to inject shadowgraph fluid results in severe ureteral pain after a few drops or possibly one or two cubic centimeters of the fluid have entered the ureter, we should suspect a second stone or stricture obstruction just above the first obstruction, and usually at the iliac gland region. An X-ray of such a condition may show a stone shadow in the broad ligament region and another longer shadow just above, due to the distending fluid in the ureter segment between the two obstructions. This second shadow should not be mistaken for a second stone. (See Fig. 7.)

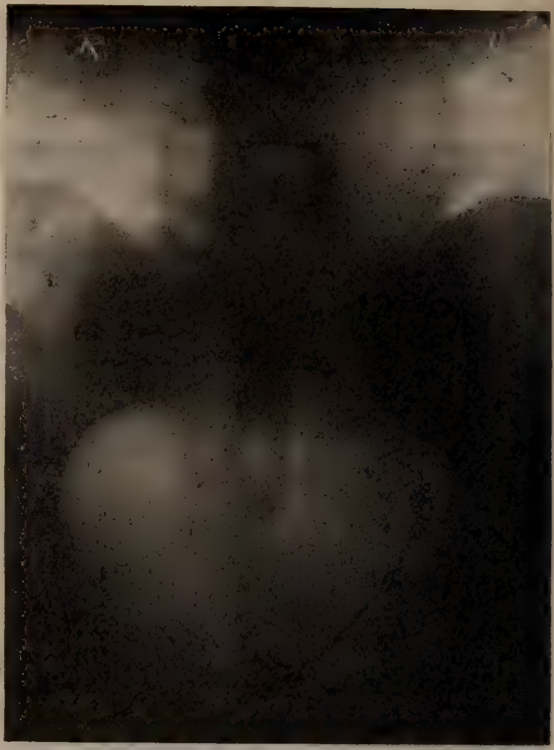

Figure 7.—Illustrating a case with two strictures in the pelvic portion of the left ureter; a stone in the lower stricture obstructing the catheter; and shadow of thorium dilating the ureter between the two strictures. Recently developing symptoms from right ureteral stricture.

The ideal preparation of a catheter for testing in a case of suspected stone or stricture is to make the spiral wax tip and then to place small wax rings at every fifth centimeter on the portion of the catheter that will enter the ureter. The second ring, ten centimeters back of the tip, should be made large, between 3.5 and 4 millimeters in diameter, and of spindle shape with long, sloping shoulders. If a stone be present, its approximate location below the kidney can be read on the wax rings. If the symptoms have been due to stricture or stone, the large wax bulb will have a decided hang on its withdrawal, and by grasping the catheter at the external urethral orifice with the thumb and finger, and then drawing the bulb through the obstruction area and out, one can measure from the proximal shoulder of the wax bulb to the thumb and finger and find the distance of the obstruction above the external urethral orifice. Allowing five centimeters for the urethra and trigonum, one arrives at the location of the lesion above the bladder.

The use of the wax-tipped catheter to determine whether a given X-ray shadow is cast by an intraureteral calculus is much simpler in females with the Kelly endoscope than in males, or for those who use the Nitze type of cystoscope for work on both sexes. Harris (Harris, Burton, "The Diagnosis of Ureteral Calculus by Means of the Wax-tipped, etc.," *Surgery, Gynecology and Obstetrics,* 1912, December, 727), Hinman (Hinman, Frank, "A Practical Method of Applying the Wax-tipped Catheter in the Diagnosis of Ureteral Stone in the Male," *Journal of the American Medical Association,* 1915, LXIV, 2129) and others have devised means for the use of the waxed catheter through the Nitze type of cystoscope. Fortunately, we may arrive at the same differential diagnosis through the use of the X-ray with the previous introduction of the ureteral catheter with retained metal stylet or with the shadowgraph fluid, or of the shadowgraph catheter or sound. (Kolischer and Schmidt, "New Method in Skiagraphic Diagnosis for Renal and Ureteral Surgery," *Journal of the American Medical Association,* 1901, XXXVII, 1228.) Even with these accessory methods of diagnosis there is opportunity for error. If the skiagraph catheter and the stone shadow are quite separate, we know we are dealing with an extra-ureteral body; but if the two shadows are in juxtaposition, or apparently superimposed, we dare not decide the diagnosis until we have used the wax-tipped catheter, or obtained another X-ray picture at a different angle or taken a stereoscopic view. (George O. Clark, "Periureteral Pelvic Phleboliths," *Annals of Surgery,* 1909, November, 913.)

DIAGNOSIS OF RENAL COLIC.*

By GEORGE W. STARK, M.D,.

SYRACUSE, N. Y.

I AM presenting this paper because I believe that renal colic, or renal pain, is too frequently overlooked in the human body; too often is a normal appendix or tube removed, or gall-bladder operated upon, when an urologist should have been consulted for that "pain in the side."

Renal colic is a symptom caused by an obstruction in the urinary tract from the kidney to the bladder, accompanied by more or less pain. The most common causes of renal colic are: Strictures of the ureters, kinks in the ureters, stones obstructing the ureters, tying off of the ureters, and pressure from without, such as tumors. Occasionally the ureter may be caught by an adhesion external to the ureter. I have one case illustrating this point.

Gastro-intestinal symptoms are, for the most part, due to renal pain acting through the sympathetic and central nervous system. Only in cases with advanced kidney changes have there been any retained nitrogen in the blood, so this can hardly be a cause for the gastric symptoms. The gastric symptoms may be so severe that they often mask the original cause. Among the symptoms frequently encountered are anorexia, dyspepsia, nausea, flatulence and constipation. Gastric analysis and X-ray examinations by a competent gastro-enterologist have been usually negative, or show a slight acidity. These gastric symptoms come and go with the colic pain. Nervousness, irritability, symptoms of hysteria or neurasthenia are concomitant with renal colic.

Diagnosis.—The disease conditions that are usually confused with renal colic are appendicitis, diseased adnexia, gall-bladder disease, duodenal ulcer, peritoneum adhesion, neurasthenia, pancreatic disease and lumbago. In appendicitis the rigidity and leukocytosis is more marked; gall-bladder disease, jaundice and turbid bile in Einhorn's bucket; duodenal ulcer, blood on string or blood in Einhorn bucket and X-ray; pelvic disease, satisfactory pelvic examination should help clear up the diagnosis.

Urology, with the aid of the X-ray and laboratory, is a fairly exact branch of medicine, and the diagnosis of the above diseases are usually made by elimination of the urinary tract. *Any case with a pain in either side that shows pus in the urine, or frequency of urination, or in some course of the disease a history of a typical attack, should be investigated by an urologist.* Just as syphilis may show any kind of skin lesion, so also the pain of upper urinary disease may simulate any other pain due to disease in this area, or may give no pain at all, as silent stones or simple pus kidneys. The severity, the location or the radiation does not in any way distinguish the pathology of the kidney or ureter. It may vary from slight discomfort to veritable agony which cannot be controlled by morphia. The duration of the pain may vary from a few minutes to hours. The most common type is that in which the pain begins in the loin and radiates downward along the course of the ureter toward the bladder to the ilium, sometimes to the leg, and at times to the ovary or testicle. In most unusual forms the pain radiates to the opposite kidney and very rarely to the shoulder blade. In some cases the pain remains located in the kidney, or in the back over the kidney, or in the back just above the obstruction in the ureter. Patients often have a pain in either side, anterior or posterior, with typical attacks of renal colic every two weeks, or months, over a number of years. In my opinion there is no question but what this renal pain is due to an interference with the flow of urine from the kidney to the bladder, whether it be a stone, kink or stricture, and the severity of the pain depends upon the degree of obstruction.

As to whether an obscure pain in the abdomen or back is caused by an obstruction in the ureter or other pathology in the abdomen can be very accurately diagnosed by means of the cystoscope, ureteral catheter, by pyelography, X-ray and functional test. On passing of a catheter up the ureter, the patient will often say that it feels like their pain, or by distending the pelvis of the kidney according to the Kelly method and reproducing the patient's pain, it is pretty conclusive that the trouble is in the kidney; or if, following a dilation of the ureter, the patient's pain disappears and the gastro-intestinal pain clears up, or the temperature drops in a pyelitis, it is quite positive that your trouble is in the kidney. That a renal colic, or pain, is due to a kink or stricture can be proven by feeling of the bougie as it passes up through the ureter, or by means of pyelography. The distance from the meatus to the catheter obstruction can usually be checked up by the X-ray findings. Kinks are usually accompanied by ptosis of the kidney, or the ureters come off at a right angle to the kidney. Stones are usually demonstrated by means of the X-ray catheter or wax-tipped catheter.

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* Read at the Annual Meeting of the Medical Society of the State of New York, Syracuse, May 7, 1919.

Treatment.—About five years ago I often noticed that a No. 6 or No. 7 catheter would not pass all the way up the ureter, often meeting an obstruction, but I found that by using a smaller catheter and reinforcing it with a wire stylet, I was able to pass certain obstruction in the ureter. Often after passing through the ureter to the kidney these obscure pains would disappear. Gastric symptoms would clear up, and if there was pus in the kidney and a temperature, the temperature usually dropped and the patients were relieved. As a result of these observations the following methods of treatment of renal colic and pus kidney have been devised and used over a period of five years. Just prior to the war I had made for me in Germany a series of ureteral bougies, ranging from filiform to No. 12 F, which can be operated through the water cystoscope. (These bougies have been remolded and are now made in France.) In cases of stricture or kink in the ureter the procedure is as follows: The ureter is dilated from two to four points at intervals of five to fifteen days. Following the dilation, the pelvis of the kidney and ureter are instillated. Having first determined the size of the kidney pelvis, with boric acid solution, the pelvis of the kidney is injected with about two-thirds of the amount of a 25 per cent solution of argyrol. The argyrol is usually left in the kidney to drain out through the ureter. If the argyrol treatment fails to clear up the infection of the kidney, silver nitrate is used. Silver nitrate is never utilized until full dilation of the ureter has been accomplished. If possible, a No. 8 ureteral catheter is used, after having washed out the pelvis of the kidney with distilled water. A 1 to 4 per cent solution of silver nitrate is injected into the pelvis of the kidney, the amount used being about two-thirds the normal capacity. The catheter is left in until the silver nitrate drains out. (That is, if five c.c. were injected, the catheter is left in until five c.c. drain out.) Where the infection of the pelvis of the kidney is most prominent, the kidney lavage with argyrol is repeated as often as every other day; but where the obstruction is more prominent the treatment is less often given, usually once in ten days. Immediate relief is obtained in the acute attacks of renal colic if you are successful in passing a bougie through the obstruction. The whole treatment is based on the fundamentals of surgery, drainage and irrigation. If the above method of treatment is followed, I believe most cases of pyelitis in which the infection has not extended into the substance of the kidney will get well. Strictures can be remedied and that ptosis of the kidney, with kinks in the ureter, can be symptomatically cured by the same treatment plus a belt, and the results are uniformly more successful than those obtained by surgery, although the dilation may have to be repeated.

One hundred and forty-six cases of renal and ureteral disease have been treated, and over a thousand kidney lavages have been given. With the exception of a few hours of renal colic in some of the cases, I have never seen any bad results from the above treatments. Of the 146 cases, six were essential hematuria and were cured by lavage of the kidney pelvis. These cases were from six to fourteen months' duration. Of twenty-one cases of kidney ptosis treated, nineteen were symptomatically cured, two would have a slight pain occasionally but were very much improved. Two cases were treated following a kidney suspension. Both were in intolerable pain, but after forcing a passage up to the kidney the pain was greatly relieved, although the results were not of sufficient relief but what the offending kidney had to be removed. The pain here was probably caused by the twisting of the ureter upon its axis. Twenty-eight cases of renal pain without the pus in the urine were treated. So far as I know, all were cured. Eight were cases of stone in the kidney; five were successfully removed surgically; two nephrectomies were performed; one refused operation but is still alive. Three had stone in the ureter; two were successfully advanced down the ureter into the bladder by dilation; the other, I believe, will have to be removed surgically. Eighty-four were pus kidney with or without obstruction; on twelve it was found necessary to do a nephrectomy; one case refused nephrectomy, but by dilation and irrigation he has been apparently well and has worked every day for a year. One case with pus in the left kidney and very advanced nymphitis died one year after stopping my irrigations. I now have one case of double pyelitis under treatment. The remaining sixty-nine cases, as far as I know, have been cured of pus in the kidney by means of lavage of the kidney pelvis and dilation of the ureter.

Conclusion.—(1) Renal obstruction has been very much neglected by the profession.

(2) Of these 146 cases treated, the great majority had been seeking aid in the profession from four months to nine years and yet 96 per cent have been cured; only 11 per cent have had to resort to surgery; 1½ per cent were doubtful; 2½ per cent were *not* cured.

Discussion.

Dr. Frederick W. Zimmer, Rochester: Upon this subject I wish to report a case of stone in the pelvis of the kidney that I was requested to operate on by one of the most competent medical men of my home city about a year and a half ago. The time was set for the operation, with the patient at the hospital for me to operate. I, however, had not been asked to make an examination of the patient. Just before the operation I was shown the X-ray plate of the right kidney which showed a stone the size of a green olive in the pelvis of the considerably enlarged kidney. The urinary analysis showed much pus, etc., and the history of the patient was that she had suffered frequent attacks of severe pain in the right abdomen, with chills and temperature.

Making the circular or transverse incision through skin and muscles, the kidney with contained stone was removed, the ureter was tied with fine chromic gut and dropped. A rubber drain was placed and removed after some five days. The incision then practically healed by first intention. After some three months her physician informed me that the patient was again very ill, with pain in the left renal region; that she was in the hospital and the X-ray showed two or more large stones in the pelvis of the remaining left kidney. Examination of the plate showed that the largest stone was the size of a bantam's egg.

This kidney, under ether, was exposed by the circular or transverse incision. By this incision it was most easy to get at the posterior pelvis of the kidney without drawing the kidney out of the incision. The pelvis of the kidney was incised; the stones, three in number, easily removed, the largest the size of a small egg.

The incision in the pelvis was closed with fine chromic gut, then a pad of nearby fat was sewed over the line of suture of pelvis. There was practically complete anuria for seventy-two hours. After this urine was increased slowly in amount.

The patient was very ill for the first three weeks. She was in bed some eight or ten weeks, gaining slowly. Six months after this last operation she had fully recovered. I have recently heard from her. She is perfectly well, doing her own housework, and has gained many pounds in weight.

Dr. E. MacD. Stanton, Schenectady: I wish to call attention to the necessity of differentiating between true stricture and simple spasm of the ureter. The impression has been given here today that true stricture is a relatively common lesion. If this were so, the pathologists would have discovered the fact long ago. As a matter of fact, more than ten years ago I approached the study of this subject expecting to find stricture relatively common, but after examining a large number of patients I have been forced to the conclusion that what I at first thought were strictures are simple spasms of the ureter. In this connection I believe that I have made an interesting observation. Most of these cases are in women of the hypersensitive type. They give a history of attacks of pain clinically resembling renal colic. Some of the attacks are very severe and apparently typical. The X-ray examination is negative as to stone. In an important proportion of cases the first thing noted in the cystoscope examination is a contracted urethra with more or less definite evidence of a chronic urethritis. The trigone is injected, especially in the region of the ureteral orifices. The ureteral catheters are often passed with some difficulty, and we suspect a stricture, but the collargol or sodium bromide plate does not confirm the diagnosis of stricture. After the examination the woman has no more attacks for several months. I find that when the pains recur a simple dilatation of the urethra is all that is necessary to cure her for another six months or a year. I suspect that the dilatation of the contracted urethra stops the tendency to spasmodic contractions extending from the urethra and trigone area to the ureter with ureteral spasms interpreted as renal colic.

Dr. Frederick J. Parmenter, Buffalo: I feel it a great privilege to be allowed to discuss two such excellent papers upon this important subject, which has been so fully covered by both speakers.

The hour is late and there are several other papers, so my remarks must be very brief, though there are many points I should like to discuss.

Modern medicine today demands painstaking care in the diagnosis of patients suffering from abdominal symptoms, which means the use often of every diagnostic aid at our command. I feel sure if a careful follow-up system is employed by surgeons they will be greatly surprised to find that many of their cases supposed cured by their operation have passed into the hands of one or more surgeons since. A patient who has not been relieved by operation usually does not return to the same surgeon again.

Dr. Hunner in his writings has mentioned focal infections as a cause of ureteral stricture, and I would urge what has not been mentioned by either speaker, the importance of seeking out these foci and having them removed when possible. I have been especially interested in renal infections because of a paper prepared and read recently upon this subject.

Bacteria gain entrance into the blood stream and pass through the kidney many times during life, and are nearly always to be found in all so-called intestinal stasis patients. Bacteria are present in a urine free from pus; and I use the term bacteriuria to cover this condition.

As the result of long-continued bacterial irritation pyelonephritis occurs, and later localized ureteritis at the usual points of narrowing of the ureter; thus stricture results as in the urethra.

I agree most heartily with the important diagnostic points and their pitfalls mentioned by both speakers, and am exceedingly glad to have been present today.

Dr. Alfred M. Wose, Syracuse: After hearing these papers by Drs. Stark and Hunner very few remain to be convinced but that ureteral stricture exists as an important factor in the pathology of the urinary tract. It does not need any reiteration on my part in a review of the subject, as I am fully in accord with the essayists.

One point I wish to emphasize is the elusiveness of the small ureteral calculi. They are at best far from stationary; they wander from the kidney to ureter and back again, from the ureter to bladder and eventually out through the urethra; rarely do they repass through a gaping ureteral orifice from the bladder to the ureter and upward to the kidney. Yet this latter fact must always be borne in mind. In the mobility of these calculi they often become lodged before or behind a stricture with more or less evidence of colic and urinary findings. To determine the presence of a calculus in the ureter a series of X-ray plates should be made on different days with a shadowgraph catheter to fix the position, and not rely on last week's exposure in an operative search; at best a plate taken one-half hour before operation will many times be of aid in localization of these offenders.

It is my experience in the majority of the cases of acute renal colic that they arise from ureteral calculi in which there is more or less evidence of occult bleeding. Notwithstanding the modern interpretation of a ureter stricture as a causative factor in these cases, the treatment remains as of old, namely: (1) Morphine, (2) massive doses of diuretics, (3) urologist. The tendency is to reverse this procedure. The most of the calculi will pass through the ureter, whereas a small minority will stick.

One should be alert to aberrant symptoms in renal or ureteral surgery. In these cases, fortunately not common, the pain and discomfort are referred to the opposite side by the patient, with all of the pathology arising on the other. Here the cystoscope and ureter catheter bear positive evidence of localization, even with negative or doubtful X-ray plates; and it thus lessens a possible error or panic in a surgical approach.

In acute cases of renal colic, procrastinate; and in all obscure cases of persistent chronic abdominal pain or colic, investigate the ureters and kidneys.

Dr. George W. Stark, Syracuse: A great many cases of double pyelitis and pyelonephrosis with secondary infections in the other kidney have been converted into a single kidney infection by the above method.

A point of very great importance, which I did not bring out in my papers, is the preliminary treatment of surgical kidneys by the above method.

The ureters of the surgical kidneys are dilated and drained previous to operation. The result of this treatment has been an increase in the combined kidney function. Toxinemia and temperature are lowered. The result of this preliminary treatment is that the patient comes to the operating table in a much better condition than though he were immediately operated upon. In no case has harm come to the patient by this delay.

Dr. Hunner: I wish to thank the members for their kind and suggestive discussion of my paper and Dr. Stark's, and I am glad to have the views of those whose experience seems to differ from mine. In closing I shall attempt to touch on some point made in each of the discussions. Dr. Sears has mentioned the help he has found in the diagnosis of obscure abdominal conditions by following Dr. Kelly's method of injection of the kidney pelvis to reproduce the patient's former pains if they were of renal origin.

I would like to advise that in using this method one should not inject the kidney to the point of great pressure, for the pain of the injection can easily be made so great as to obscure the patient's sense of comparison and she may aver that she never had a similar pain. I make it a practice to warn the patient that I am going to fill her kidney with fluid and she must tell me the moment she feels a sense of fullness in the side and before she feels a real pain. Even with this warning and with a slow injection the patient occasionally gets a sudden pain beyond the intended discomfort; and it will be only later, after she has dressed and is ready to leave the office, that she will say, "Now that the very acute pain has subsided, I feel that you have stirred up my old trouble, and it is of the same character and in the same location as my former pain."

The important fact has wisely been emphasized that one will be misled in many cases if he depends upon the urine examination. Probably in over 75 per cent of the moderately early stricture cases the urine is found absolutely normal.

Dr. Parmenter has called our attention to the great value of follow-up work, and with what a different opinion we would be forced to view some of our work if we would consistently keep track of our patients.

I had a splendid illustration of this point about two weeks ago when I was called to see a patient who was evidently in the subsiding stage of an acute renal colic attack. She had a similar attack in February, about eight weeks before, both attacks being at the time of menstruation. On examining the abdomen I noticed a lower right rectus scar, and further inquiry revealed the fact that I had operated four years previously, removing an appendix and a right ovary.

I had already suspected stricture because of the location of her pain deep back of the right Poupart's ligament and in the kidney region and because of its incidence with the menstrual periods. The operation for an appendix and removal of the right ovary looked as though I was bent on a complete job four years previously and was not very certain of the origin of the patient's pain at that time. I then said to the patient, "You have been perfectly well since your operation up until your attack in February?" "Oh, no, doctor! Don't you remember I told you and the ward doctor every day after the operation that you had not removed my pain, and it has been there ever since."

On later examination when the wax bulb was being withdrawn it hung definitely in the broad ligament region and the patient cried out, "There, doctor, is that very pain I told you about after the operation."

I am seeing from one to three similar cases every week who have been operated on by me or by my friends anywhere from one to five years previously and who have gone on with their old symptoms.

Dr. Peterson spoke of the relation between obstructions in the ureter and pyelitis of pregnancy and puerperium. I feel certain that in the future we will find the majority of these cases dependent upon ureteral stricture. We need further studies on the influence of long-standing stricture on the kidney function, and the relationship of stricture to the cases of premature birth due to uremic conditions. I have had two cases who had repeated abortions apparently due to kidney incompetency, and who have successfully carried a child to term after the dilatation of ureteral strictures. I am now following a third case who has entered the eighth month of pregnancy after having her strictures dilated and who previously lost three pregnancies in the fifth and sixth months.

I must take issue with Dr. Wose in his statement that the majority of renal colics will be found due to stone. Not all strictures lead to kidney colic, but I have attempted to show in my paper that we cannot differentiate between colic due to stricture and that due to stone, and that the preponderance in number of stricture over stone cases is so great that we can more safely make a diagnosis of a given colic being due to stricture until we prove it otherwise by the newer methods of diagnosis.

Dr. Zimmer has emphasized the great importance of refraining from nephrectomy or any serious kidney operation without first knowing the conditions on both sides.

Dr. Staunton brings up the old theory of ureteral spasms, and says that he cures many of his cases by paying more attention to the treatment of the trigonitis and urethritis. If he will adopt the method of using a wax bulb or some form of olive bulb on his catheters or bougies, I think he will conclude that he is dealing with actual strictures and not with spasms of the ureter.

There are many cases who have trigonitis and urethritis whose bladder symptoms will cease just as he claims when these conditions are properly treated, but if the patient has ureteral stricture the symptoms due to this will continue in spite of treatments of the trigonum and urethra. In many cases with inflammation and edema of the trigonum one gets a hang of the wax bulb on withdrawal at about five centimeters from the outside, but this is just at the ureterovesical juncture, and is due to the bladder wall edema and should not be classified as stricture.

INDICATIONS FOR OPERATION FOR GASTRIC AND DUODENAL ULCER.*

By CHARLES N. DOWD, M.D.,
NEW YORK CITY.

IN asking for further consideration of "The Indications for Operation for Gastric and Duodenal Ulcer," your Chairman has again called attention to a subject which has already been much discussed by our society and thus voices the demand for further effort to standardize our procedure in this difficult department of our work.

The surgery of the stomach and duodenum has been developed step by step. Each year has shown some progress: new suggestions, aids to diagnosis, aids to treatment have been subjected to searching investigation; some have been eliminated; some have been approved. The result of the study and the work has tended toward definite knowledge, and we now have many advantages over those who were doing this work a few years ago. In particular, the general use of the X-ray has added much to our diagnostic resources.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 7, 1919.

The extent to which this branch of surgery has become standardized is in some measure indicated by a study of one hundred cases with gastric or duodenal lesions who have been operated upon either in the Roosevelt Hospital or in that part of the writer's practice which has occurred outside of that hospital. This group indicates, in fair degree, the type of cases which now come to the surgeon. It is noted that in the great majority, the indications for operation were definite.

There are twenty-eight cases of cancer in the group. They are referred to because it is impossible to do stomach surgery without having cancer continually in mind. Many patients with cancer give long, preceding histories of ulcer. The diagnosis between cancer and ulcer is often difficult before operation, and even at operation it is not always easy or even possible. The patients, however, were definitely ill. They had marked symptoms of gastric disorder, and were clearly suitable for surgical interference, hence in referring to them we indicate in approximate measure the proportion of cancer which may be expected in this branch of surgery, and we emphasize the necessity of always bearing in mind the occurrence of this dread disease and the importance of early diagnosis.

The remaining seventy-two cases may be considered under the following headings:

Perforated Ulcer,
Pyloric Stenosis,
Gastric or Duodenal Ulcer, without Stenosis,
Hour-Glass Stomach,
Ulcer with Hæmorrhage.

The diagnosis in the first, second, fourth and fifth of these conditions is usually easy. In the third, the diagnosis can ordinarily be reached with a fair degree of accuracy. It is thus seen that by following the routine procedure of history taking, physical examination, X-ray examination, and study of test meals the indications for operation were clear in about 88 per cent of this group.

PERFORATED ULCER.

There were nine cases in this group, 12½ per cent of the ulcer cases. This probably represents about the average percentage of acute perforations seen in hospitals where a moderate portion of the work is of the emergency variety.

The desirability of operation in this group of patients is fully established. If a patient really begins to empty his stomach into the abdominal cavity, his chances for life steadily diminish with each hour of delay. It is a question of diagnosis, and the diagnosis is usually easy.

The cardinal symptom is board-like muscle rigidity in the upper part of the abdomen of a patient who has a sudden attack of distress in that region. It is not necessary to wait for tympanites or a thready pulse or a conditon of profound collapse, nor is it necessary to get a definite history of ulcer. The patients regularly have sudden attacks of severe epigastric pain. They are definitely ill, and they have a board-like rigidity in the muscles of the upper abdomen which is characteristic. The house surgeons, or the surgeons in the emergency department, usually make the diagnosis when the patients first appear. One who has once carefully palpated the upper abdomen of a patient with perforated gastric or duodenal ulcer will not often fail to recognize the condition when it is presented to him.

In this group the average lapse of time between the onset of symptoms and the operation was thirteen and one-half hours. All the patients recovered, but in order to complete the picture a patient should be referred to who was not operated upon, but who was seen in a moribund condition three and one-half days after the first symptoms of perforation, and who died a few hours later. Peck,[1] Sullivan[2] and Connors[3] have recently written valuable papers on this subject.

PYLORIC STENOSIS.

Patients with pyloric stenosis also give definite symptoms and definite indications for treatment. The stenosis may be of two varieties—(1) cicatricial, (2) indurated.

In the first variety the patients give histories of preceding ulcers which have healed, and which are then followed by changed discomforts—persistent vomiting, increased pain, pyrosis, and loss of weight and strength. The vomitus sometimes contains food which has been taken long before. Stomach washing gives some benefit. Food can frequently be obtained by this process which was taken a day or more previously. Raisins which are swallowed in the evening may be thus obtained on the following day. The X-ray picture shows dilatation of the stomach. In some instances this dilatation is excessive. Eleven pints of mixed material were obtained from the stomach of one of these patients by lavage. The X-ray also shows a residuum many hours after the ingestion of an opaque meal and perhaps an indication of a minute pyloric opening. It may show increased stomach peristalsis. The chemical analysis of the stomach contents usually shows hyperacidity. Any patient who is in this condition, and who is subjected to ordinary routine examination, ought to obtain a correct diagnosis. Operation, the establishment of an adequate opening from the stomach to the intestine, is clearly indicated for this condition. The results of such operation are wonderfully good. Nearly all of the patients are restored to health, strength and activity.

In this group there were fourteen patients who had cicatricial stenosis. The average duration of their symptoms had been three and three-quarter years. Thirteen were treated by gastro-enterostomy; one by pyloroplasty; eleven have been followed by periods of from three months to five years; nine showed remarkable and satisfactory gain; two showed marked improvement; five stated their gain in weight—it averaged 26 lbs. There was one post-operative death from pulmonary embolus.

The group of patients who have pyloric stenosis, due in part to indurated ulcer, present symptoms almost as definite as those who have stenosis due to cicatricial contracture. Usually, they have not suffered so long. Their symptoms maintain the type of active ulcer, but they vomit, lose strength and weight and suffer from pain, pyrosis and inanition. Lavage, and the chemical examination of the gastric contents, help in the diagnosis, but the X-ray is here, again, particularly useful as an aid to diagnosis. The duodenal cap, the pyloric ring, or the pre-pyloric region, may show defects according to the location of the induration. A minute shadow may indicate the contracted pyloric opening. A residuum six hours or more after the meal, a dilated stomach and increased and forceful peristalsis may all exist.

There were eighteen patients in this group. All were treated by gastro-enterostomy. Infolding of ulcer area was also attempted in two instances. Reports have been received from sixteen of these patients from five months to seven years after operation. Fifteen are in excellent health and are attending to their ordinary duties in comfort; the sixteenth is much better than before operation. One patient is still in the hospital doing well. There was one post-operative death from embolus. The gain in weight was recorded in eight cases and averaged thirty and a half pounds. In some of these patients, the induration of the pylorus, as seen at the time of operation, suggested the possibility of cancer, but, as yet, these fears appear to have been unnecessary. Among our cancer cases, however, there was one who had had previous gastro-enterostomy on the supposition that the induration was due to ulcer and not to cancer. One must always be mindful of possible cancer when dealing with these indurations.

Gastric or Duodenal Ulcer Without Pyloric Stenosis.

Patients in this group are most often in mind when gastric and duodenal ulcers are discussed. They are very numerous and very important. They make many demands upon both physician and surgeon, and are worthy of every effort which can be made for their relief. They present many difficulties in diagnosis. The indications for treatment are less clear than in the other classes. Post-prandial pain relieved by food or alkalies, hyperacidity and general digestive disturbances are now regularly looked for by clinicians, and even the patients talk glibly about them. Occasionally the symptoms, especially in duodenal ulcer, are so definite that the diagnosis can be made on them alone, but generally these patients are to be studied for considerable periods of time, and by more than one person, before diagnosis is reached. Careful histories are to be taken and careful physical examinations are to be made. The stomach contents, the stools, the blood are all to be examined. Series of X-ray pictures, of greater or less extent, are to be taken, and the final diagnosis should be made with full appreciation that all of these measures are liable to variations, and that a certain percentage of error is inherent in each.

Thirty of our patients were classified in this division, 42 per cent of the entire number of ulcer cases. In twenty, the ulcers were in the duodenum; in five, they were in the stomach; and in five they extended onto both duodenal and gastric sides of the pylorus. The average duration of the previous symptoms was seven and one-third years. Twenty-one of the patients were followed by periods of three months to seven years. Thirteen of them were reported free from disturbing symptoms; six were definitely improved; two were not benefited by the operation; four died after operation; five have not reported since leaving the hospital, but were in good condition at the time of leaving.

Hour-Glass Stomach.

There were three cases of hour-glass stomach. One had previously been treated for perforating ulcer, and has been mentioned in that group. The three cases were treated, respectively, by gastro-enterostomy with both pouches, gastro-enterostomy with the upper pouch, and by gastroplasty. The first did very well; the others sufferred recurrence. The X-ray made the diagnosis easy.

Bleeding Ulcer.

When a patient is suffering from gastric or duodenal hæmorrhage the first impulse is to cut down on the ulcer and secure the bleeding point. The practical difficulty in finding this point, however, had led to general abandonment of the plan. In many instances the hæmorrhage comes from small "erosions" or is due to cirrhosis of the liver with venous congestion and resultant oozing of blood. Even if it is due to the invasion of a vessel in a definite ulcer, it may be very difficult to locate it.

Moynihan estimates that not more than 3 per cent of profusely bleeding gastric or duodenal ulcers can be successfully treated by laparotomy (Bastedo[4]). Kellogg[5] gives the mortality rate of immediate operation for this condition as

36 per cent to 62 per cent. Bastedo[4] forcibly shows the ill effects of attempting to ligate the bleeding vessels.

There is an extensive literature on the subject.[4-9].

Blood transfusion affords more prospect of immediate benefit than any other procedure, and is to be advocated in a large proportion of cases.

Operation at a suitably selected time after the hæmorrhage has ceased can then be done with good prospect of cure. Immediate operation for hæmorrhage was not done on any of the patients in this group. Six of them had previously suffered from severe gastric or duodenal hæmorrhage and were treated by gastro-enterostomy at suitable selected times. None of them had recurrences after operation. However, mention should be made of three patients whom the writer has seen who died of gastric or duodenal hæmorrhage. By the time that operation was seriously considered, they were not in condition to stand it, and properly grouped donors were not available for transfusion.

Neuroses.

Mention should be made of those patients who have neuroses. Vomiting and pain are their principal symptoms, and they often simulate the history and symptoms of real ulcer with wonderful accuracy. They are to be avoided with the utmost care. They are not favorable cases for surgery.

Patients with Cholecystitis or with Appendicitis whose Symptoms simulate Gastric or Duodenal Disease.

We must remember that the first pain in appendicitis usually comes in the epigastrium, and that chronic appendicitis may give repeated and persistent attacks of pain there. We should also remember that the gall-bladder lies near the pylorus and that epigastric pain and flatulence are frequent symptoms of gall-bladder disease. Graham[10] has particularly called attention to the difficulties of distinguishing between cholecystitis and ulcers of the stomach or duodenum. Lockwood[11] has especially emphasized the role of the appendix in giving epigastric symptoms.

We hence have a group of patients in whom a definite diagnosis cannot be made, but who should have an exploration to determine whether the lesion is in the stomach, duodenum, gall-bladder, or appendix—a difficult group to deal with, but one which may give a fair percentage of good results if the best use is made of all diagnostic resources.

Evidences of Standardization.

In considering the cases herein referred to it will be noted that the great majority gave indications for operation. The diagnosis in all the cancer patients, and in at least 88 per cent of the ulcer patients, were sufficiently definite to bring them within the standardized classes.

Patients with perforated ulcer, with definite pyloric stenosis, with gastric or duodenal ulcer which has resisted persistent medical treatment, and with troublesome hour-glass stomachs, are surgical cases. Their proper treatment has been standardized by abundant experience. If we limit our surgery to such patients, we have a very extensive field for work and very important opportunity for aiding sufferers. It is better to err on the side of conservatism than on the side of hysterical enthusiasm for operation. But it is wrong to permit patients to continue their suffering when the correct diagnosis can be made and when a simple operation will cure them.

It may also be noted that no one element in the diagnosis has been given the paramount position. The diagnosis may be complex. Pain, pyrosis, flatulency, acidity, vomiting, loss of weight, hematemesis, melena, gastric retention, X-ray evidence of lesion, chemical evidence of disturbed function, abdominal rigidity or abdominal tympany or stomach splash may all be elements in the diagnosis, but the symptoms and the examinations are to be carefully worked over with each individual. The time for "snap diagnosis" has passed. Each patient has a right to a careful study of his symptoms and of his physical condition with the aid of modern facilities.

There is much opportunity for team work in this diagnosis, and there is great demand for poise; for proper judicial attitude. If we make the diagnosis correctly in those patients who really have standardized indications for treatment we are doing well. If we carefully weigh the evidence in the doubtful cases, we are at least giving them as much as they have a right to expect in the present state of our knowledge, remembering that a small percentage of them should have exploratory operations after suitable medical treatment has proved inefficient. During the last few years there has been wonderful improvement in the general procedure for this class of patients. This improvement depends on increased skill in diagnosis, and this in turn depends on the careful interpretation of the histories, the physical examinations, the laboratory reports and the X-ray reports, but not any one of these elements to the exclusion of the others.

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THE ROLE OF THE PROVISIONAL APPLIANCE IN THE TREATMENT OF AMPUTATIONS OF THE LOWER EXTREMITY.*

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PITTSBURGH, PA.

IN the treatment of civil "amputes" an admission of the advisability and necessity for provisional appliances is evidenced in the catalogues of artificial limb makers where numerous types of "shrinkers" and preparatory legs are advertised. We are informed that these commercial preparatory legs are comparatively little used for various reasons: To fit an appliance to a boggy, tender stump and to provide for the adjustment of the appliance so that it would continue to fit a rapidly changing stump; to do this without personal contact with the patient and to construct such an appliance at a reasonably low cost, is a problem the satisfactory solution of which could hardly be expected. A shrinker is a cuff made of leather or other material, which is constructed so that it will approximately fit the stump, and is provided with a lacer so that compression of the stump can be effected. The fallacy of this method of preparing the stump for weight bearing and locomotion is apparent.

It was appreciated at an early date that the Medical Corps was in a position to carry out more efficient and effective early treatment of the stump than has been possible in civil life. As American permanent artificial legs are admittedly efficient and perhaps the best that can be obtained, little effort has been expended on this feature of the problem. Considerable, however, has been done in attempting to improve provisional appliances.

In order to appreciate the necessity for a provisional appliance, it will first be necessary to analyze the new function of the stump leg and to study the physiological changes which take place in the stump in the performance of its new and abnormal function.

Briefly, the functions of the stump leg are locomotion and weight bearing. Locomotion is little different in the stump leg than in the normal leg, except that greater skill in balancing must be acquired. One is apt to think only of the weight bearing part of the stump leg in this consideration and to overlook the important part played by the proximal part of the leg, especially in locomotion. The term "stump leg" is used advisedly.

The avoidance of atrophy in the proximal part of the leg is extremely important, inasmuch as its new function will demand that it be hyper-developed. Early exercise of the muscles in this part is then of great importance, and the use of an ideal provisional appliance, as soon after the amputation as possible, is the most logical and effective method of exercising them. The error of applying a shrinker to the stump and then allowing the patient to go about for weeks on crutches with the stump leg hanging inactive, is evident; the result being of course, atrophy from disuse, involving not only the stump but the entire stump leg instead of functional pressure atrophy of the stump only. We should aim then to preserve the full power of muscle groups proximal to the weight bearing part of the stump and to avoid by all means joint contractures, and if they have occurred, to take early steps to correct them. The provisional appliance is a potent therapeutic measure in the correction of contractures, when it is properly applied.

In using an artificial leg, the distal part of the stump leg is called upon to perform an entirely new and abnormal function; *i.e.*, weight bearing. This weight bearing in the case of below-knee amputation, is distributed as follows: 1. Cone bearing (lateral of surface bearing). 2. Bony prominence bearing (head of tibia, tuberosity of tibia, fibula below head). 3. Partial thigh surface bearing (thigh cuff). 4. In certain percentage of cases, end bearing. In a finished appliance, the stump is incased in a solid shell, which is moulded or carved to fit the stump, so that all the bearing points and surfaces are used to a variable degree. The physiological changes in the stump will depend largely upon the predominating type or types of bearing chosen in a particular case. Cone and bony prominence bearing with slight partial thigh bearing, are found to be applicable to most below knee cases. Pressure atrophy is rapid and marked, consequently repeated remoulding of the socket is imperative. Atrophy of the thigh in the region of a lateral bearing (thigh cuff) is slow, but certain, and distinctly objectionable. End bearing diminishes pressure atrophy both in the stump and thigh. This is one of its main advantages, as locomotive powers are more fully preserved. In amputation of the thigh, bony prominence bearing (ischial tuberosity) cone bearing, and, in certain cases, end bearing, are utilized. Bony prominence bearing predominates so that pressure atrophy of the stump is slower and less marked than in below knee stumps. End bearing has the same relative advantages as those mentioned in below knee stumps, but to a lesser degree, inasmuch as the gluteal muscles and adjacent groups attached to the pelvis and body are interfered with very little in any case.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 8, 1919.

It is hardly necessary to state that an ideal provisional appliance should possess, in the main, similar mechanical features to those found in permanent appliances. The socket should be of solid material and should be moulded or carved in the same accurate manner, and in the same way as a permanent one. Excavations and additions which are customarily made to influence bearing on certain definite points, which are known to be adapted for this function, should be carefully made. A provisional appliance which merely shrinks the stump and does not develop the bearing points and surfaces, which will be called upon to function in a proper permanent appliance, is not an efficient provisional appliance. In addition to the above features, the provisional socket must be one which can be remoulded frequently and comparatively inexpensively. In addition to changing the shape of the socket to fit the rapidly changing stump, in a certain percentage of cases, it is not only desirable, but necessary to change the position of the socket so that a complete change of socket rather than a reshaping is sometimes necessary. This feature is important in all cases in which there are more or less malposition of the stump, which is gradually being improved by the use of the appliance.

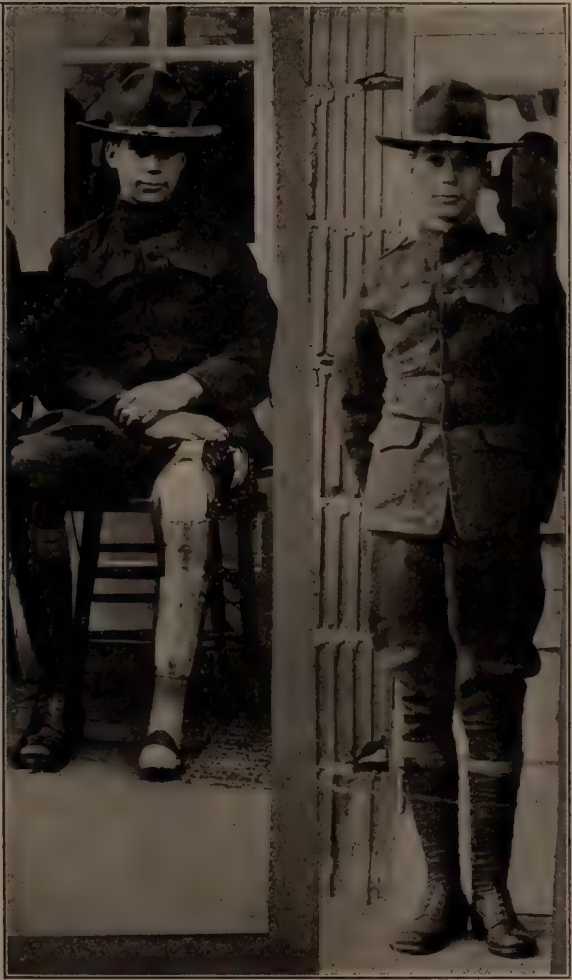
It appears that the necessity for variation in alignment in different types of cases has not been generally recognized. Each artificial limb maker has determined on a definite type of alignment for all the limbs he manufactures. Each is equally determined that his method of alignment is the best. Practically all, however, are successful in the majority of cases. It doubtless happens frequently that a patient who has found marked dissatisfaction with a certain approved make of limb is satisfactorily fitted with another make which is the same in every essential feature except alignment. The probable explanation is that the leg which fits satisfactorily was properly aligned for that particular individual. There seems to be no doubt that the question of alignment is an individual one and is dependent upon the contour and weight bearing center of a particular stump leg and its mate. Each case is an individual orthopedic problem, fully as much as a brace for paralysis or other deformity. In the provisional appliance, then, versatility in alignment is of great importance, in fact, more so than in the permanent appliance. Adjustments in alignment must be made, not only on account of the changing stump, per se, but on account of changes in the position of the stump with relation to the axis of weight bearing.

While the absence of the ankle joint in the provisional appliance will not seriously influence the gait in the permanent appliance, we are convinced that the complexity in construction entailed is fully compensated for in saving a tender, boggy stump a great amount of unnecessary trauma. The movement of plantar flexion of the artificial foot allows the socket to maintain its proper position with relation to the stump, at the moment when the weight falls on the back of the heel. With the stiff ankle, the axis of weight bearing is not maintained; and excessive bearing is thrown upon the bony prominences when they are thrown slightly out of their usual bearing surfaces.

If the proposition of supplying a provisional prosthesis involved no other problem than the construction of an appliance along scientific lines dictated by the orthopedic principles set forth in the foregoing paragraphs, the solution would be comparatively easy.

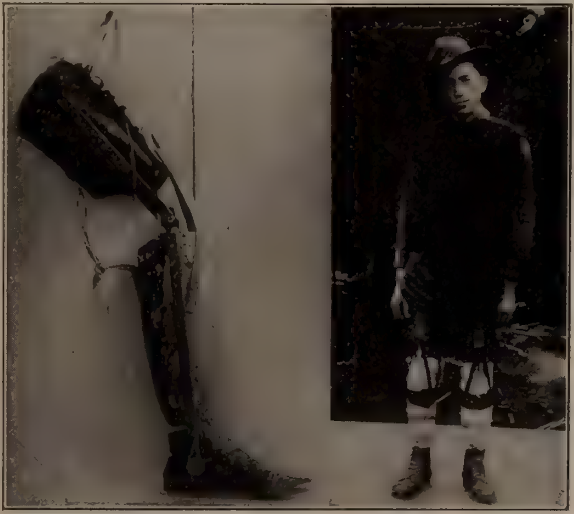
Unfortunately there are certain psychological considerations in the treatment of the amputated which compel us to compromise the application of strictly scientific principles of treatment. The recent ampute is usually most concerned in removing his physical deficiency as soon as possible from an æsthetic as well as from a functional standpoint. To meet this situation an attempt has been made to utilize a provisional leg which in all respects looks like a finished leg. Of necessity, it has adjustability for length, foot position and socket. Slight adjustability in alignment is possible also. In addition to meeting the æsthetic requirements more satisfactorily than the former type, it offers the advantage of quantity production and quicker fittings. While this type of appliance has not been applicable to as high a percentage of cases as anticipated, nor been entirely satisfactory from the standpoint of scientific treatment, its continued use, supplemented by a more versatile type, to be described, seems justified.

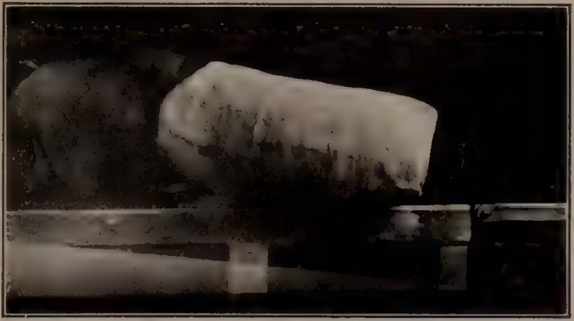
In *thigh* amputations, this type of finished provisional leg is entirely satisfactory in about 85 per cent. of cases where there is sufficient bone length to operate the ordinary thigh leg. Most of the remaining 15 per cent. fall into the class of excessively long stumps. It is not possible to fit these on account of interference of the mechanism for the adjustment of length. The greater part of the weight is taken on the tuberosity of the ischium and accurate cone bearing is relatively unimportant. In below knee amputations, the task of fitting this type of leg is much more difficult. Bony prominences are more numerous and less tolerant to weight bearing. Consequently, the bony prominence fitting must be more accurate and a greater amount of weight bearing must be allotted to the cone fitting. For this reason, the latter must be more precise. However, with reasonable ingenuity and persistence in adjustment and readjustment, about 50 per cent. of cases can be satisfactorily fitted. Initial shrinkage can be taken care of by lacing the leather cuff, but, after shrinkage is marked and appreciable space is present between the leather cuff and the solid socket, padding with felt must be resorted to, or better, a paraffine liner, made after the method of Rowley, inserted.

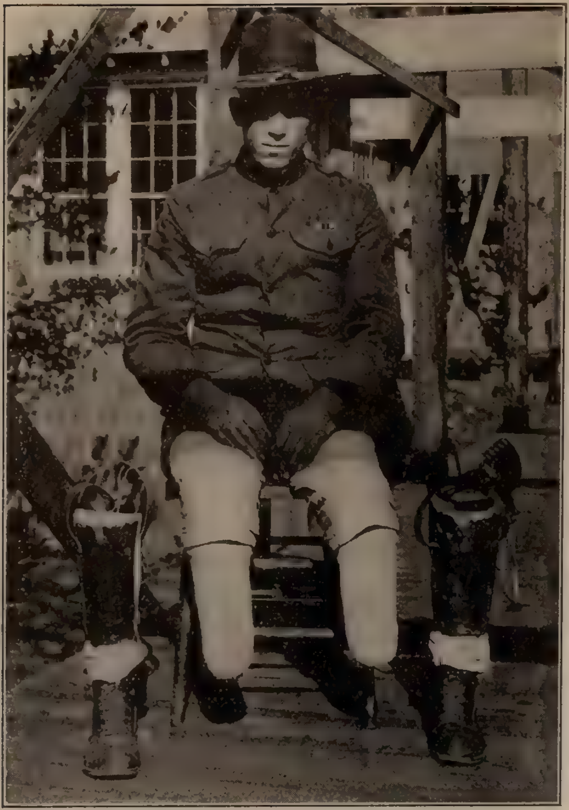

Paraffin plaster socket.

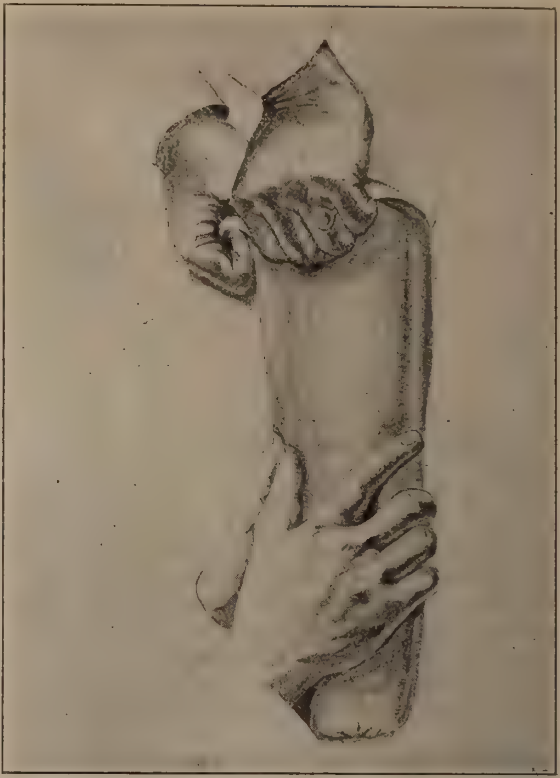
In order to meet the requirements of the more difficult cases which it is not possible to fit with the stock appliance, a more versatile prosthesis, has been perfected and used. A brief description of the apparatus as used at the Walter Reed General Hospital is believed warranted.

Description: Steel uprights with a joint at the knee and an extension for the thigh cuff are made in stock length. A foot, with or without an ankle joint, is attached, as shown in photographs. The thigh cuff is made of leather and is riveted to the steel uprights, after they have been bent to fit the leg and after the frame has been aligned. Success depends largely upon the proper construction of the socket. It should be made as follows: A sock made of eiderdown, single thickness, with the end closed, is dipped in heated paraffine. After it has cooled sufficiently to be borne, it is slipped on

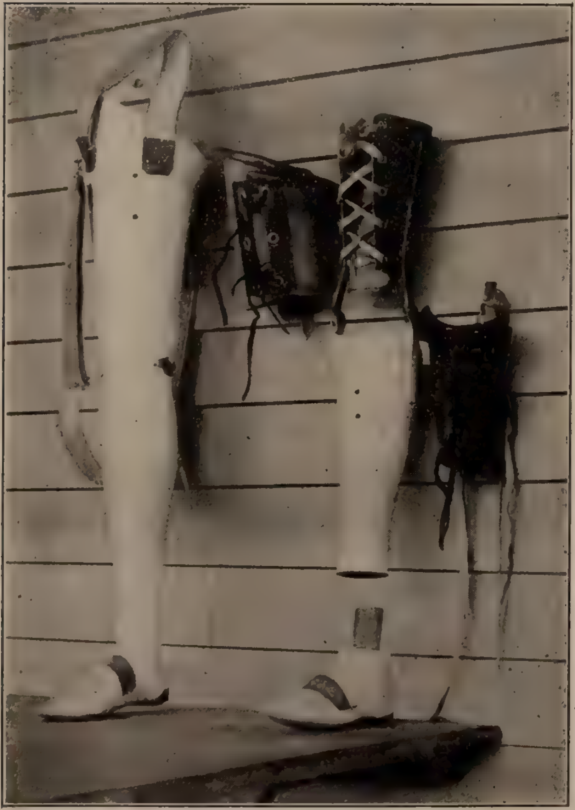

Plaster socket with paraffin liner. Constructed entirely in the hospital appliance shop.


Cast completed showing method of trimming the top. Note the position of the sheet iron strip.

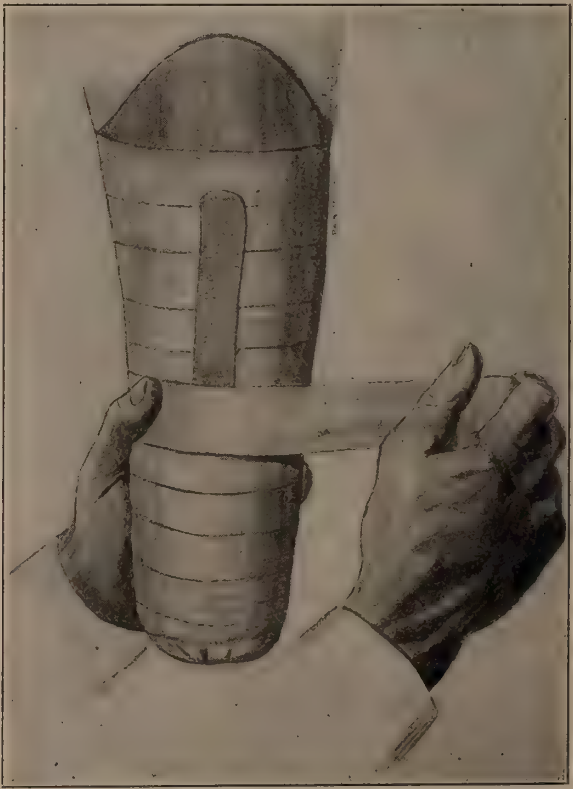




The eiderdown sock impregnated with paraffin is grasped by the patient laterally. Strong traction is then made on the sock. While the paraffin is cooling, the surgeon moulds the soft parts upwards with his hands. After the paraffin cast has cooled, it is removed and trimmed before the plaster is applied.



Stock type of provisional limb with adjustable leather cuff. Fibre construction. Adjustment for length, foot position and socket.



Paraffin mould is covered with plaster of paris, or better, Keen's Surgical Cement, in the usual way. Two sheet iron strips, ⅞ inch wide, are bent to conform to the mold. They are then placed on the sides of the cast at the site where the rivets will subsequently be placed. They are then incorporated in the plaster socket, by applying additional plaster bandages.

the stump. The patient is instructed to grasp the upper edge of the stocking and to pull up sufficiently to displace the soft parts. At the same time, the stocking is moulded to the stump by the surgeon. The soft parts should be pressed upwards in the moulding process and special care should be taken to mould under the head of the fibula, tuberosity of the tibia and over the head of the tibia. The displacement of the soft parts gives an approximate reproduction of the stump in the position of weight bearing and adds greatly to the comfort of the socket. After the paraffine has cooled, plaster of Paris, or better, Keen's Surgical Cement, is applied and allowed to set slightly. Before the remaining bandages are applied, two strips of thin sheet iron are bent and placed on the sides of the form where the rivets will subsequently be placed. These are incorporated in the cast. Special reinforcement should be made at the top of the cast around the bony prominences. On the outer and inner sides, the cast should extend up to the middle of the patella, when the leg is extended. In front, it should curve under the lower edge of the patella. Allowance must be made in the popliteal space to permit of full flexion. The plaster socket should be allowed to dry completely before any riveting is done. The shoulder strap and knee check strap are riveted to the cast as shown in the photographs.

It would perhaps be wise for beginners not to attempt at first to include the paraffine lining, but to simply use a plain stockinette liner. In this case, a woolen stump sock is placed on the stump and then over this one layer of stockinette. The plaster bandages are then applied. Care should be taken not to cause compression rings.

The socket for thigh stumps is made in a similar manner, especial care being taken in moulding the seat for the tuberosity of the ischium. In this case the cast is mounted on the shin part of the leg, with a foot and a knee block and joint. It is advisable to purchase this shin leg from artificial limb makers rather than to attempt to construct it. The freedom of adjustment as regards alignment and socket in this apparatus is apparent. It is not necessary to change the plaster socket until the patient finds it necessary to wear at least three stump socks. A new cast is then made, the side bars rebent and new cast riveted in. If shop facilities are not available for the construction of the foot, metal parts and thigh cuff, etc., in the case of the below knee apparatus, stock set-up complete, except the socket, can be purchased from artificial limb makers.

This type of appliance has been used with success at the Walter Reed General Hospital for the past five months. Early attempts to adjust the socket to fit the changing stump by lacing, were without success. Experience proves that the only proper way to refit the stump during the period of physiological atrophy from the pressure of weight bearing is to supply at intervals an entirely new socket. As most of the atrophy takes place in the first six weeks after beginning to wear an artificial leg, it has been our practice to change the socket at the end of the second, fourth and sixth weeks. At the end of six weeks, the shrinkage has progressed to such an extent, in the majority of cases, that further sockets are not considered necessary, and the patient is recommended for discharge and instructed to continue to wear his provisional appliance for at least four months longer, when he can apply for his permanent appliance. Sockets made in the manner described above, using the special plaster mentioned, will last six months.

Experience has proved the value and wisdom of using provisional appliances in the treatment of amputations of the lower extremity and with further experimentation and improvement in their construction, the ultimate universal acceptance as an approved method of treatment, is anticipated.

CONCERNING THE REFITTING OF THE BLINDED AND THE BLIND.*

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IT was my privilege to address the Medical Society of the State of New York at its Annual Meeting, April 16, 1912, on "The Prevention of Blindness and the Instruction of the Blind Child."[1] A renewal of this privilege is mine today in that I am permitted to speak to the Ophthalmic Section of your State Society on an analogous subject, making special reference to the technic of training those who have been blinded in warfare, but also referring to the education of the civilian blind.

Opportunities for observation with respect to the blinded in warfare were afforded in France and England during the late fall of 1917 and the winter of 1917 and 1918, particularly by the courtesy of Sir Arthur Pearson, the inspiring, I might say the inspired, founder and director of St. Dunstan's Hostel, Regent Park, London; in this country, by the kindness of Dr. James Bordley, Jr., formerly Lt. Colonel, M. C., U. S. Army and officer of the Division of Physical Reconstruction in charge of the Re-education of Blinded Soldiers, Sailors and Marines, at U. S. General Army Hospital No. 7, usually known as Evergreen, located in Guilford near Baltimore, on an estate made available by the great generosity of Mrs. T. Harrison Garrett, who loaned the property to the Government for the use of the blinded men, and in the Red Cross Institute for the Blind, of which Dr. Bordley is the Director, and which was organized at the request of the Surgeon General to co-operate with the military authorities of U. S. General Army Hospital No. 7 and the Federal Board for Vocational Training; in France by Miss Winifred Holt, Directrice du Comitè Franco-Americaine pour les Aveugles de la Guerre, 14 Rue Daru, Paris, and by our confrère, Dr. Magitot of the Medical Corps of the French Army, stationed at the time of this interview at Epernay.†

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 7, 1919.

[1] NEW YORK STATE JOURNAL OF MEDICINE, June, 1912.

Success in training the blinded depends upon a number of factors. Primarily, those who are blind must not be classified as "unfortunates," and blindness must not be defined as an "affliction"; at most it is a handicap, the weight of which can be steadily diminished by suitable educational methods. The blinded must not be allowed to acquire patient acquiescence nor slip into sullen despair; they must not be permitted to lose their initiative, or having lost it, they must be taught how to regain it; they must be insistently instructed in the sense of self-dependence; they must be made to realize that although the main channel to their visual centers is blocked, to quote, even if not verbatim, Sir James Crichton Browne, "many other inlets remain open, which by educational engineering may be utilized, widened, extended, multiplied, enabling this visual center to perform its associative if not its primary functions"; they must employ the power of substitution, not acknowledging that they do not see, but only that they do not see with their eyes. Thus they are not banished from the state of being normal, and the test-word in the vocabulary of this important educational problem, as Sir Arthur Pearson would say, is normality.

Doubtless many in the audience have officially or otherwise concerned themselves with the training and education of the blind, and they will confirm the pronouncements I have made as the prerequisites of success in these regards. Including among the blinded of the present war, not only those whose sight has been entirely destroyed, but also those in whom the degradation of visual power has been reduced below 1/20 of normal—"the near blind," as they are called—a reduction of vision which would seem to preclude their access to wage-earning occupations depending upon the possession of satisfactory sight in the absence of education and training which is designed to neutralize the handicap, the blinded of all the Allies will total about 6,000[2]—in England and her colonies about 2,000, in France about 3,000, and among our own forces approximately 200, and not more than 100 being totally blind as the result of war wounds. These figures are necessarily subject to correction when more accurate statistical information shall become available.

The various causes of blindness and "near blindness" may be classified thus: (1) direct injuries and war wounds of the eyes; (2) intracranial injuries which have destroyed the visual centers and pathways; (3) diseases of the eyes, for example metastatic ophthalmitis in association with pneumonia and influenza. Contrary to a common belief, comparatively few cases of total blindness dependent upon poisonous gases, for instance, dichlorethylsulphid (mustard gas) used in the operations of chemical warfare, have occurred.

Up to the end of December, 1918, St. Dunstan's had cared for and instructed nearly 1,500 blinded men, and it is to the work of this Hostel I shall first invite your attention.

As you doubtless know, St. Dunstan's is a country place belonging to Mr. Otto Kahn in Regent's Park, London, who turned it over to Sir Arthur Pearson with unrestricted permission to utilize its buildings and equipment where such distinguished success has been obtained. To it have been added the buildings of Regent's Park College and new buildings as the necessities of enlargement of the plant became evident. In various places in England and in Scotland, as well as in Canada (Pearson Hall, recently founded), other auxiliary institutions are located dedicated to the same important work.

The blinded enlisted men live at St. Dunstan's, but the officers thus handicapped are quartered in a house in Portland Place, and go to the classrooms in St. Dunstan's for the necessary education.

During the active period of the present war wounded soldiers, after they had passed through the Casualty Clearing Station to a Base Hospital, were kept there, other things being equal, not longer than three weeks, in the English Service. At the end of this time they were evacuated to England, and were sent, according to the character of the wounds and surgical needs, to various general and special hospitals. Those who had eye injuries were carefully examined by specially trained physicians and kept in the hospital as long as the needs of their condition required. Should the examination have revealed that the wounded men were blind and yet required surgical attention, the time of their convalescence was at once utilized in that they were immediately visited by workers from St. Dunstan's and some simple educational work started, and even more to the point in maintaining the technic, they were visited by some of those from the Hostel who, to use Sir Arthur's words, "had themselves learned to tread the dark trail and who spoke to them of hope and achievement." Thus, the *first step* in morale work was taken which is of paramount importance in solving the problem of the circumvention of blindness. In case no hospital treatment was required, the blinded soldiers were at once sent to St. Dunstan's, and the first words of encouragement were often spoken by Sir Arthur himself—spoken with amazing effect by one who had conquered blindness. I have myself seen him in a brief interview pluck a man from depths of despair and set him straight on the path which was to lead to success. I cannot emphasize too strongly the importance of this first step.

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† Since this paper was read the American Red Cross Institute for the Blind is in full charge of the instruction, and refitting of our soldiers blinded in warfare.

[2] See article by John Howe, being an interview with Sir Arthur Pearson, *Boston Evening Transcript*, March 12, part 2, page 4.

The re-education and training in St. Dunstan's may be divided into that which pertains (1) to the classroom; (2) to the work shop; (3) to the recreation centers; and (4) to the follow-up system after the man has been placed in a wage-earning occupation.

To avoid mental strain and weariness in classroom work, the hours are only from 9.30 to 12 A. M., and from 2.30 to 4.30 P. M., and those who are occupied with classroom lessons in the morning are detailed to the workshop in the afternoon, and vice versa. This you will readily understand is an important provision, and tends to eliminate drudgery and maintain interest. In the classrooms the men are taught to read Braille, and also, with the aid of the necessary machine, to write it. Naturally, the rapidity with which this art is acquired depends upon the degree of their sensitiveness of touch and to avoid the attendant strain which too continuous effort might induce, the lesson periods are interrupted at suitable intervals and the student detailed to an adjoining room where he is instructed in netting, which Sir Arthur considers to be the simplest handicraft a blinded man can learn.

All men are required to learn to operate a typewriter, and even those who unhappily have lost an arm or hand succeed in this respect. After the blinded man has learned to use a typewriter and passed the necessary examination, the instrument is presented to him and may serve him in a future occupation, but even more important, gives him the opportunity of comunicating with friends and relatives, as it has been found that the handwriting of the blind is subject to rather rapid deterioration. Of the instruction in current events, mathematics, geography, etc., I shall speak later.

In the workshop the men are taught matmaking, cobbling—a common occupation for the blind—weaving, basket-making in its many varieties, carpentry and joinery, and they learn with astonishing skill to construct attractive picture frames, trays, corner cupboards and tables, all, as you see, salable articles. If possible, a man is taught two trades, for example, a cobbler is also taught mat making.

Of great importance is the selection of the instructors. It goes without saying that some of the teachers must be sighted men and women, but it is the practice of St. Dunstan's to utilize those who are especially intelligent in the capacity of paid teachers. The success of a blinded capable teacher with blinded pupils is in most instances far superior to that of a sighted teacher for the simple reason that not only is the sightless man taught the trade or lesson, but he has the added inspiration of knowing that he who teaches has succeeded and has conquered his handicap. Sir Arthur attributes the rapidity with which the blinded soldiers acquire proficiency in the various tasks at St. Dunstan's in large measure to this important technic, a technic, as is well known, which has been followed in civilian schools for the blind for a long time.

One of the most important and interesting adjuncts of St. Dunstan's Hostel is the poultry farm, where all the details required in work of this character are practically presented. It is not a little astonishing to watch the men going about the business of the day and distinguishing with great exactness by touch the characteristics of the fowls that come under their care. It is stated that within a month an intelligent student in this course acquires sufficient knowledge to conduct a poultry business. With far-sighted generosity, there is also given in connection with this poultry farm a free course for the wives, or the women of the families of the blinded men, in poultry farming, so that they may assist in this future field of occupation.

Massage, always an occupation of choice among intelligent sightless people, is taught with great accuracy at St. Dunstan's. The course begins with training in anatomy, physiology and pathology, but the final graduation takes place at the School for Massage of the National Institute for the Blind, and at the time the last records were made with which I am acquainted, namely, toward the close of the past year, not a single student of St. Dunstan's failed to pass the examination in the Incorporated Society of Trained Masseurs. As evidence of the accuracy with which their work is performed it may be stated that Sir Robert Jones makes a special point of employing men thus trained in his great orthopedic establishments in England.

It is hardly necessary to add to the catalog of occupations which are open to these blinded men, and yet it would be incomplete did I not refer to the instruction in shorthand writing whereby Braille, naturally in a condensed form, is recorded, and recorded moreover, with a rapidity which equals that of the ordinary sighted shorthand writer. Telephone operating has become a very important means of support, and another plan of securing occupations for blinded men was being worked out last year, and I believe is now in operation, namely, that an insurance company should be organized where blinded officers shall act as employees, especially in the soliciting department and the securing of policies, but it was made a *sine qua non* of work that the appeal should be made along ordinary business lines and that there should be no appeal to the pity of the one solicited because the solicitor himself was blinded.

It must not be supposed that all of the hours of the day are devoted to class room duties and instruction in the work shops. I have referred to the care with which mental strain is avoided, and therefore much attention is paid to recreation. The men go for walks, they row, swim, and perform all manner of outdoor exercises; they play games, checkers, dominoes, cards, and one of their most important amusements is dancing, in which art they become exceedingly proficient. Those who are musical turn to the various musical instruments for their recreation, and often give first class performances.

The question is often asked whether an effort is made to introduce the blinded man for his training into the same occupation that he followed before he lost his sight. If this can be done, well and good, but no false effort is made in this direction. To put it briefly, previous training does not necessarily determine the choice of a trade; for example, during my visit to St. Dunstan's the most proficient basket maker in the shops had been a grocer's assistant before he joined the army. Naturally, the officers and those who have had what ordinarily are known as "the opportunities of life" are usually returned to their original occupations, resuming their duties as barristers, business men, directors of large concerns, and the like.

Finally, a word in regard to the follow-up system. After two to four months' training, resulting in the blinded man's having acquired sufficient skill to carry on his trade, he is set up in business, and the raw material is furnished to him at the lowest market price. His goods, whatever they may be as turned out, are sold in the open market, or if for any reason this cannot be done, the goods are taken by St. Dunstan's—purchased at the market price. In other words, everything is done to avoid pauperizing him, and he is never allowed, so to speak, to trade on his blindness.

When a man leaves the protection of an institution like St. Dunstan's, even though he succeeds at first, there is likely to come to him, unless he is watched, a period of depression. Therefore it was a custom, or more properly, a rule, to keep close watch on those who had been sent out to rejoin the world's workers. For example, after the first two or three weeks of trial in this regard, an instructor or worker from St. Dunstan's would be sent to see the man to encourage him and to make sure that he was competing satisfactorily with the sighted world. This plan in the earlier days of a man's effort to support himself means a great deal, and seemed to me to represent one of the highest types of social service work which I have ever witnessed. It may be said that many of the men not only earn wages equal to those which they had gained prior to their loss of sight, but better wages.

Just before leaving our country, at the conclusion of a recent visit, Sir Arthur said: "I confess to being very proud of St. Dunstan's. The life there is a succession of wonders—the wonders of tragedy transformed into joyful content, and helplessness into capability, of resolute courage into conquest of difficulties which for a time seemed overwhelming, of a steady determination which nothing daunts, and of the truest heroism." We also are very proud of Sir Arthur and his work.

Referring to the work of our own institution, popularly known as Evergreen, of which I have previously made mention, and the associated Red Cross Institute for the Blind, it may be stated, quoting from its own literature, that these institutions have a double function, first, that of a hospital for the men while they are in need of medical care, and second, a school in which they are fitted to carry on the battle of life in spite of blindness. The object of Evergreen has been that the blinded man, when dismissed from the service of the United States, may resume his place as a self-supporting member of society, or be prepared to extend his instruction under the guidance of the Federal Board for Vocational Education.

It is unnecessary to record the types of instruction, work and recreation because they would be repetitions of those which have already been described. The equipment is most elaborate, and the greatest care has been taken to secure suitable instructors and adopt the advice of experts from among those who are especially skilled in the education of the civilian blind. The course of instruction comprises not only the required, but also the elective courses. These elective courses, as planned for vocational training comprise professional, commercial, industrial, agricultural and home work. The professional work in largest measure, unless massage, piano-tuning and bookbinding be excepted, will be under the direction of the Federal Board of Vocational Education.

In the United States a very important survey has been made to determine in what industries, and with what work in any industry, blinded men can compete satisfactorily with those who are sighted. Great plants have been carefully inspected, and classified lists of the various jobs have been prepared which can be undertaken by a man who has lost his sight. Time does not permit the description of the elaborate plans which have been developed, and which include, for example, the establishment of a chain of stores across the country, each a replica of the other, with the type store at the central point, so that a man there trained and later stationed for his occupation at a distant place in another one of the series comes at once on familiar ground and is not required to relearn his orientation.

The literature of Evergreen, as well as the Red Cross Institute for the Blind, is readily obtainable, and can be consulted by those who desire to pursue this subject further. Any one who peruses the roster of the Military and Medical Staff and the associated Educational Staff of General Hospital No. 7 (December, 1918), as well as that of the Red Cross Institute for the Blind, will see how carefully it has been gathered, and Dr. Bordley and his associates deserve the highest commendation.

Because the methods for the relief of the loss of sight make a strong appeal to the community, as they properly should, all communities have been greatly interested in the methods which have just been outlined. A rather widespread belief is prevalent that there is much that is new in the educational and training systems relating to the refitting of blinded soldiers, and that results have been achieved never before possible or attainable. That the reconstruction of grown men, often suddenly blinded by the agencies of warfare and the disease incident to it, differs in certain particulars in its technic from that applicable to children who have been blind from infancy, or, at least, who have acquired blindness in very early life; that such technic has been highly successful in the large majority of instances; that the special difficulties of solving the problem of blindness in adults in these circumstances has been met with commendable and inspiring effectiveness are self-evident facts.[3] But it would be unfair to the great work which has been consecrated to the training of the civilian blind by distinguished educators who have devoted and are devoting their lives to this effort that their labors in these respects should remain unmentioned. Indeed, it is of more than passing interest that they should be recorded and the efficiency of their labors emphasized. They, their results and their methods have been of the utmost value in the elaboration of the plans for the relief of those who have been blinded in the present war.

To this end I permit myself to call your attention to an outline of the reconstructive education which is followed in the best American institutions for the civilian blind. For the preparation of this outline I am indebted to Mr. O. H. Burritt, Principal of the Pennsylvania Institution for the Instruction of the Blind at Overbrook, Pennsylvania; in fact, I shall so closely follow the memorandum which he kindly prepared at my request that it constitutes his contribution to the paper I have the pleasure of presenting to your Society.

The subject is conveniently classified under three headings: (1) General or prevocational education; (2) Vocational education; (3) Field and placement work.

1. *General or Prevocational Education.* Instruction is usually organized and conducted under four principal departments which, arranged in the order of their importance for the whole student body, are: the department of physical education, the department of manual training, the literary department, and the department of music.

(*a*) *Department of Physical Education.* Blind children as a rule are anemic, with flaccid muscles and with many nervous habits. Therefore upon entering school a child is thoroughly examined by the school physician, surgeon, ophthalmologist, laryngologist and dentist, and treatment is prescribed as needed. The school regimen provides plenty of good wholesome food, regular hours of sleep and frequent baths because cleanliness and a good personal appearance are essential. The rules in these respects are rigidly enforced. The best modern schools are equipped with gymnasia, arranged and stocked exactly as they would be for seeing pupils, with swimming pools, where all the boys and about half the girls are taught to swim and many learn to dive, and with bowling alleys of the regulation type, *i. e.*, without any special devices for the blind.[4] Playgrounds are indispensable for the physical development of the pupils; they are equipped with swings, see-saws, rocking boats, slides, merry-go-rounds—in short, with every possible device for encouraging play out of doors. The blind play the Rugby game of football, with only slight modifications. Dancing is taught and greatly enjoyed. There are literary societies, athletic associations, etc., and thanks to the efforts of Dr. Charles D. Hart, the great benefit of the Boy Scout organization has been introduced into the lives of blind boys. The purpose of all these activities is not only to make strong bodies, but also to develop ease and grace of movement, so difficult and yet so important in the training of those deprived of sight.

(*b*) *Department of Manual Training.* As the hand must do duty for the eye, particular emphasis is laid upon its training. To this end there are kindergarten occupations, selected Montessori materials, supplemented by modelling with clay, paper folding and cutting. Clay modelling is continued in older grades, followed in the boys' department by working with tools in wood in a variety of forms. Interest is continued by the introduction of such occupations as chair-caning, willow and reed basket-making, carpet and rug weaving and broom-making. The girls are taught hand-sewing, knitting, crocheting, machine-sewing, chair-caning and domestic science.

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[3] Only too frequently the blinded soldier has lost a hand, unhappily sometimes both hands, and special modifications in machinery of instruction must be made. This is, of course, true in a limited number of cases among civilian blind.

[4] Record of totally blind pupils 222, of possible 300.

(*c*) *Literary Department.* Pupils completing a twelve-year course in the best schools for the blind have the equivalent along literary lines of about three years of the standard high school course. Pupils with exceptional mental ability who desire to enter college, usually complete their preparation by one year's additional work subsequent to graduation. In a good, modern school for the blind nearly all subjects are taught that are usually pursued in the better graded schools of the state in which the school is located, with the exception of those for which sight is obviously indispensable, *e. g.*, pencil drawing and the use of water colors. Fundamentals are reading and writing of a dot type. Complete mathematical codes have been devised in the dot types so that text-books are available for the fingers in arithmetic, algebra, geometry, trigonometry, analytical geometry and calculus. Figures necessary in geometry and the higher mathematics are provided in embossed form. For the instruction in geography the chief special devices are embossed maps, and descriptive geography is as easily learned by the blind as by the sighted. The totally blind can do comparatively little laboratory work; accordingly, experimental science is not prominent in the curriculum of the schools for the blind. Students pursuing advanced courses at high schools or colleges who are especially interested in science follow the work of seeing fellow students in the laboratory with marked advantage.

Children totally blind from infancy or early childhood can with considerable effort learn to write with pencil, and while those who have lost sight after learning to write are always encouraged to continue writing, which can be legibly done by the use of a simple device that enables them to keep the lines straight, typewriting is the easiest and best tool for blind students in high and normal schools college and university. Sightless students are perfectly at home with the "touch system" now generally taught in commercial schools, and no special machine is necessary.

(*d*) *Department of Music.* That all blind people are musical is a popular fallacy. The truth is, greater effort is made to discover musical talent and, if it exists, to develop it to the highest possible point of efficiency. Apart from its value as a vocation, for the few who possess exceptional musical ability, music, especially singing, has a general educational value. In the best schools normal departments have been developed within recent years in which pupils with good native teaching ability are given a course of from two to three years in music, during which they learn how to teach seeing pupils in accordance with the most approved methods obtaining in the best schools of music for the sighted.

Prevocational education aims to provide an all-round development of the individual, to furnish the opportunity for judicious selection of the talented pupils for subsequent more highly individualized training for a vocation, and to give the best possible equipment to those whose abilities do not warrant specialized advanced intellectual training.

II. *Vocational Education.* When a pupil has completed approximately two-thirds or three-fourths of the prescribed prevocational course, there is obtained from the entire staff a composite judgment of his capabilities and of his particular talent. Emphasis is then placed upon training each individual pupil for the line of work his particular ability suggests. Some other pupils attend high school, normal school, college, university or theological school. Those possessing the requisite ability as teachers of music, whether instrumental or vocal, having been trained in the normal department of the school for the blind, are subsequently taught by teachers of music outside of the institution selected because of their exceptional and inspirational teaching ability. The blind are succeeding in the law, the ministry and various lines of business, including the solicitation of life insurance. Piano-tuning, as is well known, is a fruitful field for the less intellectual blind who have the requisite mental, mechanical and musical ability, and it is probable that at the present time more totally blind men in America are achieving success in this line of work than in any other one trade or profession.

(*d*) *Field and Placement Work.* A comparatively recent development in the best schools is that of field officer and placement agent, whose duties are threefold: To aid in getting blind children into school, to acquaint himself with the capabilities of pupils some time before they leave school in order that he may be able to place them more intelligently, and to suggest lines of remunerative employment for those acquiring blindness in adult life.

The following two paragraphs from the Eighty-sixth Annual Report of the Pennsylvania Institution for the Instruction of the Blind indicate the success attained by one of the most successful of the Field Agents, Mr. Liborio Delfino, who in addition to his blindness has lost his right arm.

"*Placements in 1918.* The total number of positions secured during the year was 39, of which 3 were temporary for the summer vacation only. Two persons were dismissed as unsatisfactory, leaving 34 individuals — 8 women and 26 men—who are still (December 1, 1918) employed. The estimated earnings per annum of these 34 persons are $20,172.00."

The following statement as of November 1, 1918, shows the aggregate amount of approximate annual earnings of 66 individuals placed by our efforts or intercession since 1910, who are still on the job:

21 in factories (18 at $520 per annum)	$9,360
(3 at $1,200 per annum)	3,600
10 teachers in schools for blind, including living	7,000
3 home teachers	1,600
1 piano teacher, part time	150
1 vocalist, church position	100
16 piano tuners, store and factory	12,480
1 tuner, Board of Public Education	1,100
2 dictatypists	1,728
5 news venders	3,500
5 small shopkeepers	2,500
1 guide to salesmen, boy with partial sight	300
66 individuals whose estimated earnings are	43,418

This is not a selected list, but includes representatives of every type of individuals who apply for training and guidance—boys and girls, men and women, those who are totally and those who are partially blind. In ability they have varied from those of keen intellect to those who are dull and backward.

In a discussion of the prevention of blindness and the instruction of the blind child[6] before this Society in 1912, I made mention of the advisability of the application of the principles of modern psychologic research in schools for the blind, and referred to the conferences in this regard with Mr. Burritt, Principal of the Pennsylvania Institution for the Instruction of the Blind at Overbrook. He and I easily agreed that such psychologic investigation would bring about practical results. The Board of Directors of the Institution on recommendation of a special committee approved the plan submitted by Mr. Burritt, and Dr. Samuel P. Hayes, Professor of Psychology at Mt. Holyoke College, was engaged to direct the work and began his labors on September 1, 1916. The plans for psychologic research at Overbrook were outlined by Dr. Hayes, as follows:

"The mental gradation of the students by the use of Binet-Simon tests modified for the testing of the blind; the development of other tests of a similar nature; and the standardization of the tests by comparison of results obtained from blind children of different ages here, in Boston, Batavia, Columbus, and elsewhere.

"Laboratory experiments upon a limited number of intelligent blind subjects to give a basis for criticism of many common-sense statements about the blind one hears in popular discussion or reads in books and articles upon the blind—the facial or sixth sense, the wonderful memory and great power of concentration, the superior tactual and auditory acuity, etc.

"Observation of class work at Overbrook to be followed by discussions with the teachers upon the psychology of the various school subjects and the special pedagogy of the blind.

"Compilation of a series of tests for vocational guidance of the blind. This will naturally be the last phase of our work, but so much progress has been made by some psychologists that we hope to build upon their results."[7]

It would be very interesting to give in detail some of the applications of the principles of research in pedagogy and psychology to the special problems of the training and employment of the blind. This, however, is a subject too extensive to be dealt with in the present paper. For those who are interested and desire to pursue the matter further the references in the footnotes may prove to be valuable.[8] There is space to add, however, a résumé of the actual work which has been done by the Department of Research of the Pennsylvania Institution for the Instruction of the Blind at Overbrook since September, 1918.

A course has been given in elementary psychology to a class of twelve blind teachers, with the view of training them for work in scientific introspection. Tests for determining the characteristic mental imagery of the blind have been worked up and will soon be tried on these partly trained subjects. Three sets of group tests have been given to the whole school : One a test to determine the "rate of writing" of the different grades, to be used in checking other group tests; and two sets of tests revised from intelligence tests given to sighted children, respectively known as "Pyle's Group Tests for the Mental Examination of School Children," and "A Group Point Scale for Measuring General Intelligence," by S. L.

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[6] New York State Journal of Medicine, June, 1912.

[7] As Mr. Burritt points out, applying mental tests to blind pupils is not entirely new. They were applied in April and May, 1915, under the direction of Dr. Thomas H. Haines to the 224 pupils then enrolled in the Ohio State School at Columbus which, so far as I am aware, is the first school in which the tests have been applied to every pupil of the school. Eighty-fourth Annual Report of the Pennsylvania Institution for the Instruction of the Blind, 1916.

[8] The Inauguration of Research Work at Overbrook, by O. H. Burritt, 84th Annual Report, 1916; The Work of the Research Department, 85th Annual Report, 1917; Report of Preliminary Tests in Reading, by Samuel P. Hayes, Ph.D., Director of Psychological Research, Pennsylvania Institution for Instruction of the Blind, Overbrook, April, 1917.

and L. W. Pressey. The Binet-Simon Intelligence Tests, adapted to meet the needs of blind children have been given to all the new pupils, and it is hoped that the low-grade pupils can be given these tests before the end of the school year.

The most recent classification of the student body at this institution in accordance with Terman (L. M. intelligence quotient) is appended:

	Boys		Girls			
Intelligence Quotient	No.	Per cent of Boys	No.	Per cent of Girls	No. Regardless of Sex	Per cent of Total School
Superior .... 110 or above	21	27%	15	28%	36	24%
Average 90-110	33	42%	30	43%	63	43%
Dull 80-90	14	18%	15	22%	29	20%
Borderline 70-80	6	8%	5	7%	11	8%
Probably feeble-minded .... Below 70	4	5%	4	6%	8	5%
Totals......	78		69		147	

These 147 students comprise all the pupils except those in the Kindergarten Building. Some were tested in 1917, and the newcomers in the spring of 1919.

It is hoped that the work among the blind in the present warfare and that which has gradually developed in the civilian institutions for the blind, placed thus in comparison, shall serve a useful purpose. Naturally, as before pointed out although there are great and important similarities in technic, there are also differences. In the first instance we deal with grown people who have been stricken, many of them, suddenly blind. All of them have a background of previous training; they have performed the duties of various occupations before they lost their sight, and it has been explained how such occupations are of an advantage in their training, even though they may not return, at least not all of them, to the work which was theirs prior to the advent of their blindness. The work in England, in France and in America has shown that men who are deprived of their vision can compete in a far greater number of trades and bread-winning occupations than ever before have been placed at the disposal of the blind, and just because of the circumstances to which reference has been made, these men can be returned to such occupations in a comparatively short space of time. In this respect the future education of the civilian blind, whether such education is begun in childhood, or whether it applies to adults who lose their sight and, like the soldiers, have back of them years of training, will gain a large advantage, if in no other way, because those who control the various occupation centers will more readily throw open their doors to blind workmen than they have previously done. The glory of solving the great problem of the management, rehabilitation and refitting of blind men, women and children has received a fresh impetus, and all those who are engaged in this great and important work are freshly stimulated and encouraged.

In closing the address to which I have several times made reference, I said: "It is with no little satisfaction that, for example, at Overbrook, we can point to the success of our graduates and to the long list of occupations with which they are concerned. Great care has been taken to trace the careers of our graduates, and 85 per cent of all of them are succeeding. All manner of occupations, broom-making, chair-caning, business house positions, massage, pianists, teachers of music, stenographers, field agents, social workers, tutors to the blind, etc., are represented. It is a long, satisfactory and inspiring list."

This list can be repeated in so far as it relates to the graduates of many of our great civilian institutions for the instruction of the blind, and now to these we may add the results obtained by those who have concerned themselves with the refitting of the blinded in warfare, and quoting once more, I may say that these men, "no longer in the class of unfortunates, are useful, satisfactory, bread-winning members of the community. They have acquired the advantage of self-dependence and of successful effort; blindness has been circumvented."

Medical Society of the State of New York

District Branch Meetings

Annual Meetings for 1919.

First District Branch—Wednesday, October 15th, at Yonkers.

Second District Branch—Monday, November 3d, at Brooklyn.

Third District Branch—Thursday, October 9th, at Albany.

Fourth District Branch—

Fifth District Branch—Wednesday, October 1st, at Rome.

Sixth District Branch—Tuesday, October 7th, at Owego.

Seventh District Branch—Thursday, October 2d, at Rochester.

Eighth District Branch—Wednesday, September 3d, at Buffalo.

THIRD DISTRICT BRANCH.

THIRTEENTH ANNUAL MEETING, ALBANY, N. Y.,
THURSDAY, OCTOBER 9, 1919.

PROVISIONAL PROGRAM.

President's Address, Luther Emerick, M.D., Saugerties.

"Prevention of Relapses in Cases of Arrested Tuberculosis, with Practical Demonstrations of Masso- and Aero-therapy, and Discussion of Hydro-Solar and Psycho-therapy," S. Adolphus Knopf, M.D., New York City.

"Encephalitis Lethargica," Hermon C. Gardinier, M.D., Troy.

"Some Remarks on Work in a Base Evacuation Hospital, A. E. F.," James N. Vander Veer, M.D., Albany.

"Diagnosis and Treatment of Renal Disease, Based Upon the New Laboratory Methods," Nelson K. Fromm, M.D., Albany.

Clinics will be held in the Albany and St. Peter's Hospitals, and the new New York State Laboratory will be open to visitors.

FIFTH DISTRICT BRANCH.

THIRTEENTH ANNUAL MEETING, CUSTODIAL ASYLUM, ROME, WEDNESDAY, OCTOBER 1, 1919.

PROVISIONAL PROGRAM.

Address of Welcome, Hon. William Ross Lee, District Attorney, Utica.

President's Address, "The Psychology of Imagination," G. Massillon Lewis, M.D., Vernon.

Business Meeting.

Election of Officers.

SCIENTIFIC SESSION.

"Experiences in the A. E. F.," William D. Alsever, M.D., Syracuse.

"Gangrene Associated with Diabetes," John R. Williams, M.D., Rochester.

"Health Insurance and State Medicine," Walter H. Kidder, M.D., Oswego.

SIXTH DISTRICT BRANCH.

THIRTEENTH ANNUAL MEETING, COURT HOUSE BUILDING, OSWEGO, N. Y.
TUESDAY, OCTOBER 7, 1919.

PROVISIONAL PROGRAM.

Business Meeting 10.30 A. M. for the election of officers and the transaction of necessary business.

Dinner at the Ahwaga House at 12.30.

SCIENTIFIC PROGRAM.

President's Address, "Health Insurance Legislation," R. Paul Higgins, M.D., Cortland.

Title to be Announced, Donald Guthrie, M.D., Sayre, Pa.

"The Diagnosis and Treatment of Peripheral Nerve Injuries," Martin B. Tinker, M.D., Ithaca.

"Some Interesting Cases of Ectopic Gestation," Thomas F. Manley, M.D., Norwich.

Title to be Announced, Major Kennedy F. Rupert, M.C.U.S.A.

"The Early Diagnosis of Arterio Sclerosis," N. Philip Norman, M.D., Watkins Glen.

Title to be Announced, Arthur W. Booth, M.D., Elmira.

"Modern Hospital Records as Adopted by the Binghamton City Hospital," Frank M. Dyer, M.D., Binghamton.

An entertainment has been planned for the ladies of a trip down the river, and all physicians are urged to bring their wives.

County Societies

MEDICAL SOCIETY OF THE COUNTY OF LIVINGSTON.

REGULAR MEETING, SONYEA, N. Y.
TUESDAY, AUGUST 5, 1919.

The meeting was called to order by the President, Dr. Shaw, with an attendance of twenty-seven members.

The minutes of the last regular meeting held at Avon were read and approved.

The Secretary reported the transfer to membership in the Livingston County Society of J. Carlton Partridge, M.D., formerly a member of the Steuben County Society, and Hugh S. Gregory, M.D., formerly a member of the St. Lawrence County Society.

The following officers were nominated to be voted upon at the Annual Meeting to be held in October: President, Frederick A. Wicker, M.D.; Vice-President, Judson M. Burt, M.D.; Secretary-Treasurer, G. Kirby Collier, M.D.; Delegate to the State Society, Arthur L. Shaw, M.D.; Censors, W. E. Lauderdale, M.D., F. J. Bowen, M.D., Frederick R. Driesbach, M.D., John P. Brown, M.D., and Francis V. Foster, M.D.

The following interesting scientific program was presented:

"The Folly of Watchful Waiting as Applied to Surgical Conditions," Thomas Jameson, M.D., Rochester.

Discussion by Drs. Bowen, Lytle, O'Grady, Neuburger and Jameson.

"The Importance of the Laboratory," George W. O'Grady, M.D., Rochester.

"Pulmonary Tuberculosis," Frederick J. Bowen, M.D., Mt. Morris.

The papers of Dr. O'Grady and Dr. Bowen were discussed by Drs. Austin, Burke, Gregory, Shanahan, Foster, Collier, Burt, McIntyre, Shilen and others.

Albert T. Lytle, M.D., of Buffalo, President of the Eighth District Branch, and a member of the Committee to Study the Subject of Health Insurance with Reference to Its Relationship to the Medical Profession, addressed the Society on this important question, and gave a very clear view of the situation, explaining in detail the organization of the Health Conservation League.

John H. Burke, M.D., made a motion that the chair appoint a committee of three to ascertain the attitude of the members of the Society toward Health Insurance and report at the October meeting. This motion was not seconded, and Dr. Driesbach recommended that the subject be taken up at the next meeting for free and open discussion.

The matter of a fee bill for Livingston County was brought up by Dr. Collier, and was discussed by Drs. J. P. Brown, Bowen, Burt, Guinan and Foster.

On motion of Dr. Lauderdale, seconded by Dr. Brown, the chair appointed a committee of five, consisting of Drs. Brown, Burke, Foster, Newton and Bowen to take up the subject of a fee bill and report at the October meeting.

On motion of Dr. Driesbach, seconded by Dr. Burke, it was agreed to hold the next meeting at 4 P. M., having both an afternoon and evening session of the Society. The by-laws required that the next meeting, which is the Annual Meeting, be held at Geneseo.

Following the discussion of Dr. Jameson's paper, the Society were guests at luncheon of the Craig Colony.

MEDICAL SOCIETY OF THE COUNTY OF CAYUGA.

Regular Quarterly Meeting, Auburn, N. Y.,

Thursday, August 14, 1919.

At the regular meeting of the Society there was a good attendance of members and guests who listened to the following interesting program:

'The Early Diagnosis of Pulmonary Tuberculosis" (with moving pictures), Frederick W. Sears, M.D., State Sanitary Supervisor, Syracuse.

Miss Ruth Stevens, head of the new laboratory for Cayuga County, explained what our laboratory was now ready to do. The physicians of the entire county welcome this addition to our equipment.

MADISON COUNTY MEDICAL SOCIETY

Annual Picnic, Sylvan Beach, N. Y.

Tuesday, August 5, 1919.

The meeting was opened with the business session at which the question of Compulsory Health Insurance was discussed. No definite action, however, was taken; the matter was laid on the table to come up for consideration at the Annual Meeting in October.

After the business session the meeting adjourned to dinner at the Hotel Royal, at which thirty-five members sat down.

Dr. Martin Cavana, gave an address on "The Physical Benefits and the Sights and Scenes of a Transcontinental Trip," which was followed by addresses by Drs. Nelson O. Brooks, Otto Pfaff and George W. Miles, of Oneida, Dr. G. Massillon Lewis, of Vernon, and several others.

The Society then adjourned to Carnival Park, where it was entertained by Miss Constance Marvin, of New York, who performed some special features of fancy and high diving, including diving into a tank containing five and one-half feet of water.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

Milk. By Paul G. Heineman, Ph.D., Director of the Laboratories of the United States Standard Serum Company, Woodworth, Wis. Octavo of 684 pages, with 237 illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Cloth, $6.00 net.

Industrial Nursing. For Industrial Public Health, and Pupil Nurses, and for Employers of Labor. By Florence Swift Wright, R.N. Published by the Macmillan Co., New York.

The Surgical Clinics of North America. June, 1919. Published Bi-Monthly by W. B. Saunders Co., Philadelphia, Pa.

Mortality Statistics of Insured Wage-Earners and Their Families. Experience of the Metropolitan Life Insurance Company Industrial Department, 1911 to 1916, in the United States and Canada. By Louis I. Dublin, Ph.D., Statistician, with the collaboration of Edwin W. Kopf, Assistant Statistician, and George H. Van Buren, Supervisor Statistical Bureau. Published in 1919 by the Metropolitan Life Insurance Co., New York.

A Text-Book of Urology in Men, Women and Children including Urinary and Sexual Infections, Urethroscopy and Cystoscopy. By Victor Cox Pedersen, A.M., M.D., F.A.C.S. Octavo of 991 pages, illustrated with 362 engravings, of which 152 are original and 13 colored plates. Philadelphia and New York: Lea & Febiger, 1919. Cloth, $7.00.

Pulmonary Tuberculosis. By Maurice Fishberg, M.D. Second Edition, revised and enlarged. Octavo of 744 pages, illustrated with 100 engravings and 25 plates. Philadelphia and New York: Lea & Febiger, 1919. Cloth, $6.50.

A Text-Book of Pharmacology and Therapeutics or The Action of Drugs in Health and Disease. By Arthur R. Cushny, M.A., M.D., LL.D., F.R.S. Seventh edition, thoroughly revised. Octavo of 712 pages, illustrated with 71 engravings. Philadelphia and New York: Lea & Febiger, 1919. Cloth, $4.50.

Hygiene and Public Health. By George M. Price, M.D. Second Edition, thoroughly revised. 12mo. of 280 pages. Philadelphia and New York, Lea & Febiger, 1919. Cloth $1.50.

Rules for Recovery from Pulmonary Tuberculos; A Layman's Handbook Treatment. By Lawrason Brown, M.D. Third Edition, thoroughly revised. 12mo. of 192 pages. Philadelphia and New York: Lea & Febiger, 1919. Cloth, $1.50.

Mess Officers' Manual. Prepared by several officers of the Division of Food and Nutrition of the Medical Department, U. S. Army. 16mo. of 192 pages; illustrated. Philadelphia and New York: Lea & Febiger, 1919. $1.50.

Roentgen Interpretation. A Manual for Students and Practitioners. By George W. Holmes, M.D. and Howard E. Ruggles, M.D. Octavo of 211 pages, illustrated with 181 engravings. Philadelphia and New York: Lea & Febiger, 1919. Cloth, $2.75.

State of New York. Thirtieth Annual Report of the State Hospital Commission, July 1, 1917 to June 30, 1918. 451 pages. Octavo. Albany: J. B. Lyon Co., 1919.

Book Reviews

Diet in Health and Disease. By Julius Friedenwald, M.D., Prof. Gastro-Enterology, University Maryland School Medicine and College of Physicians and Surgeons, Baltimore; and John Ruhrah, M.D., Professor Diseases Children in the University of Maryland and College of Physicians and Surgeons, Baltimore. Fifth edition thoroughly revised and enlarged. Octavo, 919 pages. Philadelphia and London: W. B. Saunders Co., 1919. Cloth, $6.00.

This is a completely revised fifth edition of one of the best works on the subject of dietetics in any language.

There is practically nothing in the way of a problem of feeding in health or disease, in the child or the adult, which is not covered in the text of this work.

It would seem, even from a casual survey, that the compilation of this work must have entailed a prodigious amount not only of labor but of patience.

Nothing seems to have been left out, even the standards of milk inspection and the modification of milk for infant feeding.

Diet list for institutions, recipes and detailed description of the technic of preparation of various dishes and articles of food are carefully set forth, while the caloric value is always given. There is hardly a specialty or phase of the practice of medicine in which this work would not be of practical use, as the question of food, calories and vitamines is constantly before every practising physician and surgeon. W. H. Donnelly.

Surgical Aspects of Typhoid and Paratyphoid Fevers. By A. E. Webb-Johnson, D.S.O. Founded on the Hunterian Lecture for 1917. Amplified and Revised. With foreword by Lieut.-General T. H. Goodwin. New York and London. Oxford University Press. 1919.

We have been accustomed to look upon typhoid fever as a medical lesion only, but more recently the surgeon has been given a prominent part in the treatment of the condition. In the book presented by A. E. Webb-Johnson we have the lesions in the various organs presented and their surgical significance. This book is a résumé of the gradual enlargement in the treatment of the disease, and while it does not present much that is new it collects it in a single volume where it can be consulted when necessary and valuable information obtained.

E. W. S.

The Don Quixote of Psychiatry. By Victor Robinson, Ph.C., M.D. Published by the Historico-Medical Press, 206 Broadway, N. Y. City, 1919.

This biography of 334 pages will probably be of more interest to medical men who have had experience as resident officers in institutions for the insane than to the general practitioner.

It is the account of a many-sided, versatile and energetic man—Shobal Vail Clevenger—who became noted for his writings, as an alienist and reformer.

The book is written in rather breezy but interesting style. The volume owes its length to considerable space devoted to accounts of others with whom Clevenger came in contact. The apology, however, for such might be found in the probable attempt to bring out in contrast his ever-impending but never complete triumphs.

Clevenger did not take up the career of medicine till nearly the age of forty.

Prior to that time he had been in and out of many things. He was a clerk, soldier, hotel keeper, probate judge, revenue collector, surveyor, telegrapher, engineer and inventor.

He chose medicine because of "too much politics" in the other occupations.

Then begins the interesting but at times erratic activities as pathologist, superintendent of a hospital for the insane, writer, teacher, editor and consulting alienist, well known in the West in the early eighties.

In a word, the title of the book quite aptly sets forth what is to be expected.

E. M. Somers.

Surgical Treatment. A Practical Treatise on the Therapy of Surgical Diseases for the Use of Practitioners and Students. By James Peter Warbasse, M.D. Formerly Attending Surgeon Methodist Episcopal Hospital, Brooklyn. Three large octavo volumes; separate Index Volume. Volume III, 861 pages, 864 illustrations. Philadelphia and London: W. B. Saunders Co., 1919. Per set (Three Volumes and Index Volumes.) Cloth, $30.00.

The present volume completes the treatise. It is supplemented by a complete index to the three volumes in a separate, convenient volume of 123 pages. Such an index to so comprehensive and extensive a work is of as great importance to the practical usableness of a book as a knob is to a door. It opens the book for ready reference. To have the Index furnished to us, as a separate volume easily handled and readily referred to, is a most commendable and attractive novelty in book making.

The preparation of such a comprehensive treatise by a single author is an unusual achievement in these days of co-operative authorship and of the production of systems which are a series of monographs by many authors. It is altogether more noticeable and interesting since the author has been conspicuously an advocate of the "co-operative principle" in other forms of human activities. He has certainly presented a strong demonstration of the fallacy of his own reasoning in other fields in the excellence and value of these three great volumes in which he has embodied the results of his own studies and labors through thirty years of devotion to surgery, for they are the more valuable as they have running through every chapter the same restraining, guiding, conservative, experienced, judicious mind.

We are glad Dr. Warbasse has given us this book. As we have it we feel as if we could always appeal to "Philip Sober" whenever we find that its author, branching out into other fields, is betrayed into fallacious, possibly mischievous tendencies. The personal friends of Dr. Warbasse are aware that in this work they have the "swan song" of the author as a surgeon; that it is a thesis with which he has bidden farewell to surgery, henceforth to devote his time and energies to other lines of effort. It seems a pity that this should be so, but it is doubtless the result of application to his own life of those principles of surgical economics which he has presented in the closing pages of this treatise. According as we have been able to gather the drift of the author's reasoning he would have it that "individualism" is the bane of surgical life, as well as of the social state in general. Truly a revolutionary doctrine in this Western Hemisphere, where all the philosophy of its civilization and of its development to this day has had as its basis the proclamation of the rights of man as an individual to "life, liberty and the pursuit of happiness!"

However this may be, we are sorry to lose from the list of practical surgeons the author of so notable a work as that comprised in these three noble volumes. It is to be regretted that at the time when by his age, his undiminished vigor, his accumulated experience and ripeness of judgment, he could have filled in the world an important and most useful place in this special field, in which he has shown such aptitude and demonstrated such skill, he should have abandoned a field in which this book shows him to have become a master. In this last volume the field of surgery is swept up to gather in the subjects remaining from the two first volumes, beginning with Hernia and ending with "The Economics of Surgical Treatment," and including, The Surgery of the Extremities, that of the Genito-Urinary Organs, male and female, and Plastic Surgery. This volume preserves the same characteristics as were noted in the earlier ones—clearness of treatment, positiveness of statement, vigorous diction. The work as a whole may be accepted as a faithful mirror and trustworthy guide in the field of surgical treatment as developed to date.

L. S. P.

A Text-Book of Practical Therapeutics with Especial Reference to the Application of Remedial Measures to Disease and Their Employment upon a rational basis. By Hobert Amory Hare, M.D., B.Sc. Seventeenth Edition, enlarged, thoroughly revised. and largely rewritten. Octavo of 1,023 pages; 145 illustrations and 6 plates. Philadelphia and New York: Lea & Febiger, 1918. Cloth, $5.50.

Practical therapy and clinical therapy have had a long inning. Like most practices that endure for a generation or two, there is much of merit that deserves perpetuation and some that should go into the discard. Dr. Hare's book has gone through seventeen editions and the weeding out has left for today's consideration many practical and clinical observations in succinct and readable form. While the laboratory has placed much of our materia medica upon a scientific basis, there still remain many drugs that are used upon a clinical basis. Until laboratory findings demonstrate otherwise we must continue to use these drugs in that manner. There is no book in the English language that better balances laboratory and clinical reasons for the use of drugs.

The elaboration of the section on Diet is commendable; likewise that section considering Remedial Measures Other Than Drugs. This book should be a classic with the general practitioner.

M. F. DeL.

Problems of Fertilization. By Frank Rattray Lillie, Professor of Embryology, University of Chicago. Published by the University of Chicago Press, Chicago. Price, $1.75 net.

The editors are presenting a number of more or less popular books on subjects of interest to the more educated layman. While intensive studies they do not contain all the data which the specialist asks for, and though the endeavor is to avoid strictly scientific terms so as not to confuse the non-professional student, it is yet sought to be exact and sufficiently comprehensive to have them of real value as permanent contributions to science.

Everyone is interested in life—even if only in the one that now is. It is to a significantly important phase of it to which Prof. Lillie devotes his treatise. The explanation of the very beginning of life has been many times essayed; but not until recent years have the data been sufficient to warrant the assumption that a trustworthy elucidation has been possible. Two books lately reviewed in the Journal have been based on opposing views: the strictly biological and the physicochemical. In this book we have a modest opinion that the truth lies probably between the two; and it has been in the spirit of their co-ordination that the author's studies have been made.

The subject matter is seen in the following chapter headings. "The history of the fertilization problem;" "The place of fertilization in the life-history;" "The morphology of fertilization;" "The physiology of the spermatozoön;" "The physiology of fertilization;" "The problem of specificity of fertilization;" "The problem of activation." There are numerous references for further study and what is rare, a good index.

Chapter 7, on Activation is, maybe, the least tehnical and most interesting to one who is not thoroughly interested in this subject; then pp. 129-177 ought to attract. If these two chapters are read the others also will be read.

A.F.E.

An Outline of Genito-Urinary Surgery. By George G. Smith, M.D., F.A.C.S., Genito-Urinary Surgeon Out-patients, Massachusetts General Hospital; Captian Medical Corps, U.S.A., Member American Genito-Urinary Surgeons; and American Urological Associations. Authority to publish granted by the Surgeon-General, U.S.A. Illustrations by H. F. Aitken. Published by W. B. Saunders Co., Philadelphia and London, 1919.

This little book is written expressly for the general practitioner. It reviews in a brief and practical manner the advances of modern urology. For the busy doctor who wishes to keep in touch with this branch of medical science it may be recommended.

N. P. R.

Training School Methods for Institutional Nurses. By Charlotte A. Aikens, formerly Director Sibley Memorial Hospital, Washington, D. C.; author of "Hospital Management," "Studies in Ethics for Nurses," etc. 12mo 337 pages. Philadelphia and London: W. B. Saunders Co., 1919. Cloth, $2.25 net.

This volume is by a well-known authority and writer on the subject of nursing and is divided into two main sections the first of which takes up the training of the pupil nurse in institutions, and the second the training choice and duties of the head nurse.

The subjects to be taught in the various years of training are set forth and the proper method of teaching them taken up.

The housekeeping side of institutional work is an important one and receives due consideration from the writer, as do also the orders and records, the duties of the chief medical and surgical nurses, and supervisors.

A work of this nature is of particular value and interest to those who are concerned in the training of nurses and the executive management of hospitals.

W. H. Donnelly.

The Higher Aspect of Nursing. By Gertrude Harding. 12mo of 310 pages. Philadelphia and London: W. B. Saunders Co., 1919. Cloth, $2 net.

There has been a veritable flood of books on nursing in the past year, some of which were new, and others later editions of older publications.

Of this mass of literature on a very important subject, the present work stands out as almost unique, in that there is no word said therein regarding diet, nursing methods, technic or any of the practical phases of the practice of the nursing profession.

No such sordid commonplace considerations were in the mind of the writer who has chosen such abstract and spiritual subjects as "Unworthy motives," "Discordant magnetisms," "Emotionalism," "Adverse criticism," "Tactlessness," "Jealousy and envy," "Self-pity," "Vanity," etc.

In other words the psychological side of nursing and the study of the personality and temperament of the nurse are the foundation of the book, and after all may it not be that this side of the handling of patients is just as important as the actual mechanical methods of treatment?

As a refreshing change and as an example of originality, excellent style, perfect English, and extraordinarily wide vocabulary, this makes fascinating reading.

W. H. Donnelly.

The Medical Clinics of North America. Volume II, Number IV (The New York Number, January, 1919). Octavo of 303 pages, with 60 illustrations. Philadelphia and London: W. B. Saunders Co., 1919. Published bi-monthly. Price per year: Paper, $10; cloth, $14.

In this, a New York number, the clinical memoranda presented are of more than average worth. The volumes in this series have served a definite purpose in presenting varied medical subjects in a most attractive fashion. Their atmosphere is distinctly clinical, in that methods of study, investigation, differentiation and treatment are entered into more fully than in the usual text-book. The authors feel less bound by convention are more personal in their opinions, present their subjects with greater ease, and develop their points with more emphasis. These, therefore, have more vigor and live in the memory more vividly.

In this issue the articles most prominent are, in the reviewer's opinion, those of Hart on mitral stenosis, Geyelin on diabetes, Bullowa on local evidence of tonsil involvement in the causation of distinct or systematic disease, and Du Bois on the basil metabolism in thyroid disease. Contributions by Bandler, Timme, Palmer, Lamb, Bureger, Sheldon, Blumgarten, Strong, Atchley, and Meyer, further enhance the value of this issue.

F. B. C.

The Medical Clinics of North America, Vol. II. No, V., March, 1919. Published Bi-Monthly by W. B. Saunders Co., Philadelphia.

Seventeen well-known internists, pediatrists, and workers in gynecology, dermatology and radiography supply the material for this Boston number of the Medical Clinics. There is wide variety of subject-matter, and it is well presented. Christian supplies a full discussion of cases of hepatic cirrhosis and fibrinous bronchitis. C. J. White presents thirty-two pages dealing with the diagnosis and treatment of the commoner skin diseases. Minot writes interestingly and in detail of the differental blood examinations in four cases associated with enlarged spleens. The inter-relations of tuberculosis and influenza are discussed very sanely by J. B. Hawes, 2d: a timely article! Lord contributes a characteristically complete clinical study of a case of lung abscess. Franklin White's presentation of gastro-duo denal ulcer deals admirably with the details and rationale of its medical treatment.

Articles on diverticulitis of the colon, nephritis, effort syndrome, scurvy, diet of children, aortic aneurism, and "ptomains" (sic!) complete a volume well worth reading.

NEW YORK STATE JOURNAL OF MEDICINE

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Vol. XIX. OCTOBER, 1919 No. 10

EDITORIAL DEPARTMENT

THE SILENT WORK OF THE STATE MEDICAL SOCIETY.

THE first purpose of the State Medical Society as stated in the Constitution is to federate and to bring into one compact organization the medical profession of the State of New York. To this end, numerous activities have been instituted, all of which are well known to the members, for they are visible and very tangible. The official Journal and Directory go into the office of every member. The work of the legislative and other standing committees is well known. The general annual meeting, as well as the eight district branch meetings, are also understood. All these are a part only of the great service rendered by the State Society in its effort to form a compact and efficient organization.

What may be called the silent work of the Society is not adequately understood by a considerable part of the membership. The Society consists of nearly nine thousand members, distributed among sixty constituent organizations, and spread over 47,000 square miles. Attention has frequently been called in these pages to the mixed and varied character of the membership and the different interests of the various groups. These tangible activities do much to bring these groups into harmony and knowledge of each other. They would be futile, however, without a central office to federate them and make them a united and effective power. The management of this office the Society has committed to the Secretary. It is here that the great silent work is conducted. It is the balance wheel so important to the smooth and effective running of the great machine.

One of the most important functions of this central office is the keeping of records. Each County Society, it is true, has its own records, but they are isolated, and each is a single unit. They are like a case of pigeon-holes without coordination and with no communication between them. The central office establishes that coordination and renders each effective for good to the others. It combines them into a great and effective power. "United we stand, divided we fall," is an adage especially applicable to the present organization of our great Society.

The attaining of this end necessitates a vast system of record-keeping. These records are kept for both the Secretary and the Treasurer. This system was established by Dr. Townsend, a man of extraordinary executive and business ability. Upon his death the present Secretary, upon his sudden entrance on his grave duties, found an office of efficiency rarely existing in the largest business concerns. It is not sufficient in these days of change to simply maintain business methods unimpaired. They must be strengthened where possible and kept in line with constantly changing conditions. This is a perpetual duty laid upon the Secretary.

The County Society records are mostly kept accurately and in a businesslike manner. There are exceptions, however, and these exceptions vitiate the whole. Even if there were no exceptions in the records of the one hundred and twenty secretaries and treasurers, they are but portions of a whole. Comprehensive records, including all the affiliated societies, must be accurately kept to prevent the State organization from falling into chaos.

But few county secretaries keep a correct list of the medical registrations in their county clerk's office. A complete certified list of registrations in every county has been obtained by the State Secretary dating from 1880, when the registration law became operative. Since that time the lists have been kept up to date, and a complete certified list is maintained in the State Secretary's office.

At the outset it was realized that a record made but once a year was almost futile without follow-up work. Therefore a list has been obtained from each county clerk twice every year. In the large counties a list has usually been obtained more frequently than twice a year. In the large cities of the Metropolitan District, which are accessible from the Secretary's office, one of the clerks obtains recent registrations every three weeks. This keeping of the registration lists in the State Society office accurate and up to date is imperative for efficiency. All this is done for the sake of the Society without reference to publication. The publication of these lists is of enormous value to every County Society. The Directory puts them into print for the use of county officers and members. They go into every county and into almost every town of the State.

The view taken by some members that the Directory is published simply as a convenience for the physicians of the large cities is a narrow one. Its fundamental object is to give every member an accurate list of the legal practitioners of the State. It is issued not as a commercial enterprise by laymen who have no appreciation of medical ideas of ethics, but under the supervision of the organized medical profession. It is clean, decent, and ethical. It furnishes to every member of the State Society a list of the legal practitioners in his vicinity. It does this without extra expense or special registration. It is one of the benefits that accrue to the members under their annual assessment of $3.00. In addition to this, they receive for small sums the STATE JOURNAL OF MEDICINE, protection in case of suit for alleged malpractice, legislative activities, and the support of a strong, compact, and federated body of their fellow physicians.

Upon the receipt of the Directory each fall, it is the duty of every member to open it and ascertain if the name of any practitioner or newcomer in his vicinity is not included. If the name is not there, it is a case for investigation. The newcomer may have registered after the publication of the Directory, or his name may possibly not appear for some other reason. If it is not in the Directory, however, it is wise to write at once to the State Secretary and he will inform the writer why the name did not appear.

The work of the Treasurer is large in volume and is inadequately understood by many members. He must deal not alone with the treasurers of the County Societies, but must keep over nine thousand personal accounts annually. The State Society must know who are its members in good standing and who may hold office or sit in the House of Delegates, the controlling body of the organization. It must know for itself whether its own assessments are paid, as the basis of its income. As already mentioned, most county officers are efficient and keep accurate records, but some do not do so, and errors may be made by the most careful and conscientious men.

For this reason a checking up system is imperative. It is a frequent experience that members are elected to office by County Societies who are in arrears for dues and assessments or are otherwise disqualified. It has even occurred that applicants have been elected to membership who have never registered. Applicants have even been admitted who have not passed the State examination and are liable to prosecution as illegal practitioners. Such a case occurred but a few weeks ago. Officers have been elected by the House of Delegates who could not legally perform the duties of the office. It has even elected a Vice-President who was not a member of the Society. In several instances, even last year, County Societies elected presidents who were not eligible.

Our societies are not private organizations, but are an integral part of the State government and have powers and duties not possessed by any other medical body. Eternal vigilance is necessary to hold this great organization in conformity with the law of the State and make sure that its action is not vitiated by illegal acts or the presence of illegal members or officers. This duty of watchfulness is placed upon the central office of the Society.

Some of the valuable results of correct record keeping may not occur to the average member. Take as a single example the fact that the county clerk's office in one of the counties was a few years ago destroyed by fire and the medical registration lists were lost. This was a grave situation for the profession of that county. For years it would have been impossible to prove that a given practitioner had not been registered. The county would have become an attractive place for all sorts and conditions of quack and illegal practitioners. This county appealed to the State Secretary for help. He had in his office a certified list of registrations in that county. This list was forwarded, was accepted as legal, and the county was protected. Such a condition might occur in almost any county of the State, but the State Secretary would be able to meet it without delay.

Suppose the records of the secretary and treasurer of a County Society were destroyed, a very possible mishap. The roll of the Society would be gone, and the treasurer would be unable to prove that members had not paid their dues. The State Secretary could furnish a correct roll of membership to the one, and the State Treasurer by his records could enable the other to protect the Society from loss of income.

The card indexes of membership are kept in three sections. In the first are the names of members in good standing; in the second are those in arrears for dues. The latter are still members but, under the By-Laws, are not eligible to receive most of the benefits of the Society. The third is a constantly increasing list of those who have been members but are not now on the roll. It gives a complete Society history of former members, showing date of entrance, date and reason for exit, whether by death, resignation, expulsion, or non-payment of dues. This is a list of much value, to which reference is frequently made. In the case of candidates for admission who have formerly been members, it shows to the Admission Committee when and why they took their exit, facts of much importance in many cases.

The records of the State Secretary and Treasurer are kept on one set of card indexes. The result has been that in fourteen years there has never been a misunderstanding between these two officers, for misunderstanding is impossible, the primary records of members of each being the same.

We are well aware that concentrating these two important executive offices in one city has sometimes led to feeling. The facts are that economy and accuracy can be obtained only by this system. Separating the two offices in different parts of the State would involve the maintaining of two vast systems of card indexes, with the added expense of daily communication. But of much more importance would be the danger of constant misunderstanding, error, and delay.

The question may arise as to how it is possible for the Secretary to do all this work. It is not possible. At the reorganization of the Society in 1905 an Executive Secretary was appointed who is the supervising head of the central office, and who, with the assistance of an office force, adequate by economical management, conducts the work.

Much of the work here described is dependent upon the files and card indexes. This work, as well as much of the executive and routine business, is conducted by the office force under the supervision of the Executive Secretary.

The Secretary is unable to do any part of this work in his private office, where he has no records or files. Communications sent to him there are liable to delay. They should always be sent to the office of the State Medical Society, in the building of the Academy of Medicine, 17 West Forty-third Street.

In large business concerns or public executive offices a manager or superintendent is necessary. For such a position a man of executive ability or special knowledge of the business is chosen, and to him is committed questions of business policy and the broader matters of administration. This is the scheme adopted by the State Society. The Secretary is a physician, chosen because of experience and knowledge of the profession of the State, a man appreciative of its ideals and ethical principles, and acquainted with the State Society, its history and purposes, and loyal to its every interest. It is not expected that he will be a mere clerk to sit in an office in New York devoting his whole attention to details. He is expected to meet and to confer with the members, and to be constantly familiar with the desires and interests of the profession in every quarter of the State. It is, therefore, a part of his duty to attend medical society meetings, especially those of the District Branches and the County Societies. He has frequently stated at these meetings that the information he brings is small, but the knowledge he carries away is large and necessary to the adequate performance of his many executive duties.

The Secretary is also the judicial officer of the Society, and to him are annually referred for adjudication many controversies between members or constituent societies involving questions of organic law, as contained in the By-Laws and Constitutions of the County and States Societies and the American Medical Association.

The printing for the State Society and its branches is an item involving much labor in the Secretary's office, from which every program and folder is issued. The Secretary is directed by the By-laws to prepare and issue all programs. It is the duty of the Committee on Scientific Work to make up the programs for the Annual Meeting, including all the sections. It is for the Secretary to prepare them for publication and issue them. He must make up the program for the House of Delegates and prepare the official roster for that body. For weeks before each Annual Meeting the whole office works at high pressure.

He receives a program from the officers of each of the eight district branches, prepares it, has it printed and sent to every member. For the past three years he has requested the Committee on Arrangements to have a booklet written upon the convention city, which he prepares and issues. He prepares and issues stationery to every officer and committee, as well as large numbers of official blanks and registration cards. He prepares all placards and wall signs for the Annual Meetings and sees that pads and numerous other requisites are supplied to the sections and House of Delegates. The mass of detail of this character so necessary for the smooth running of the meetings is enormous.

For a hundred and thirteen years the State Medical Society has stood as a bulwark for the protection of the public and of the medical profession. It has been in the fore-front of every effort to advance the standards of the profession, to conserve its interests, and protect it from aggression and injury. In many of the most important movements for these purposes during the past century it has been the originator and sole advocate. To-day, it is stronger in numbers and higher in public esteem and in the respect of the Legislature than it has ever been before. Under its charter, it is a public organization made up of constituent societies which are also public organizations. For a century public officials and public bodies have gone to it for advice and counsel upon health questions and have respectfully listened to its requests. It is a perfectly constructed machine. The county society as the unit of construction, is the basis of the State Society and the American Medical Association.

The State Secretary is in almost daily communication with the Secretary of the American Medical Association and reports to him all changes in membership and officers. There is thus a close union between the county, state and national bodies, forming an organization splendid in unity, efficiency and power, a stable unit.

Alliances are notoriously unstable. Harmony is short lived. No two allies have the same interest in the subject of the alliance. The one most interested becomes most active and arouses the jealousy of the others. Discord arises, jealousies develop, disintegration follows, and the alliance falls into pieces.

The State Medical Society has weathered storm after storm. It is today the most powerful weapon in the hands of the profession for its own defense. It is fighting a good fight; it is keeping the faith. F. M. C.

Original Articles.

THE SELECTION OF OPERATIVE METHODS IN EMPYEMA OF THE THORAX.*

By HOWARD LILIENTHAL, M.D., F.A.C.S.,
NEW YORK CITY.

"HOW do you treat empyema?"

This question has been frequently put to me by the casual visitor to my clinic, and a few years ago the question might have been easily answered by the statement that the diagnosis was made with the needle, and that the treatment was by the resection of one or two ribs in the posterior axillary line in the lower part of the thorax, such resection being made subperiosteally and drainage secured by two tubes.

In the light, however, of the modern inquiry into this problem, both as to the various causes of the disease and its diagnosis and operative therapy, it would be almost as difficult to answer as would be the question "How do you treat peritonitis?" without specifying as to whether the infection was due to a ruptured appendix, a typhoid perforation, a pneumococcus infection or infection from the pelvis. Also without taking into consideration whether said peritonitis were of the so-called "general" type or of the spreading type or of the encapsulated variety.

Empyema of the thorax is rarely a disease entity but is nearly always the result of infection of the pleura, usually from the lung; and probably most often this infection spreads from the rupture of one or more minute, superficial, pulmonary abscesses, this fact having been demonstrated at postmortem examinations. Sometimes these lung abscesses are large enough to be of themselves important complications.

Breaking down tumors of the lung and suppurating echinococcus cysts are among the rarer causes of the disease. Then, too, there is the traumatic variety due to direct infection through wounds of the chest. Empyema may also occur as part of a general infection of the serous cavities in which both pleural sacs and also the pericardium may be involved.

Permit me to discuss very briefly the selection of operative procedure in the more usual forms of pyothorax. For convenience we may classify them as follows:

I. Empyema resulting from one of the forms of pneumonia.

II. Empyema from the rupture of an abscess of appreciable size.

III. Chronic empyema with thoracic fistula.

IV. Traumatic empyema—a. Pleuritis; b. Infected hemothorax.

I. *Empyema resulting from Pneumonia.*—In discussing these cases it must not be forgotten that the little abscesses mentioned above may be multiple, each one causing a separate pus focus through slow perforation with the formation of adhesions. Sometimes as many as four distinct collections have been found at operation, each one surrounded by dense tough walls. Frequently there is a condition which looks like a large single sac, yet on careful exploration smaller abscesses are found containing usually thicker exudate than is found in the main cavity. (Examples of this are shown in Figs. 1, 3, 4.)

In making the diagnosis, the X-ray is of extreme importance. However, even this valuable aid may fail in the presence of a large collection of purulent fluid which casts a shadow so dense and so general that the details are completely hidden. After the chest has been opened, however, whether by aspiration or by incision, the greater part of the effusion will have been removed and the additional foci or sacculations can be beautifully demonstrated.

The mere presence of pus in the pleural sac does not necessarily make the case urgent. Empyema may exist for two years or more if it is well encapsulated even though the chest be quite filled with fluid, provided there is comparative asepsis. Recently I operated in one of these cases, the patient having been first tapped and pus found two years before. He finally came for operation because an empyema necessitatis had developed, and probably from the long compression of the lung that organ had become fibrotic* and refused to expand on the strongest effort of the patient. He is still under observation (Fig. 5).

The studies and observations of the Army Empyema Commission in the United States have been most interesting and suggestive. It must not, however, be forgotten that they were dealing with a single class of patients; young men of a group selected for its general good health and vitality. Even though stricken with grave illness there was a resiliency, an ability to "come back" which made these patients peculiarly satisfactory to treat. The Commission is particularly sanguine in regard to the Carrel-Dakin method as first practised by Depage and Tuffier. The writer will comment on this method farther on.

In deciding upon the primary operative procedure in any empyema the first thing to consider is whether or not it is the mechanical pressure of the purulent fluid upon the circulatory apparatus in the thorax with the displacement of the heart which is causing the cyanosis and respiratory embarrassment so frequently noted. The loss of respiratory area is not enough in itself to account for these symptoms, nor is the sepsis.

Relief of pressure is the first crying need and must be secured as soon as possible. If the patient is acutely ill and in great distress, with seropurulent exudate, the thorax can be easily emptied without shock by what is known as air-replacement aspiration. This, in fact, is not an aspiration at all in the true sense of the word, but the mere evacuation of the fluid by means of a small trocar and canula which permits the fluid to escape and a certain amount of air to replace it without the powerful vacuum force of the usual Potain or other suction apparatus. The patient has but to be drawn to the side of the bed and the instrument inserted through a minute incision in the skin between the ribs, the position being such that the puncture shall be in the dependent part of the chest. If afterward it is desired to expel part of the air which has entered during the outflow of the fluid this can nearly always be done by causing the patient to strain with the glottis closed until bubbles cease to appear at the submerged extremity of a rubber tube previously attached to the canula. At this instant the instrument may be withdrawn. If a patient is too ill to strain continuously for a long enough time to get all of the air out of the chest he should be made to strain repeatedly, the operator pinching the tube with each inspiration. When this has been done a few times no more bubbles will appear on expiration and the instrument is quickly withdrawn. The writer has demonstrated this

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 7, 1919.

* Histology confirmed by Dr. P. W. Aschner, of the Path. Dept., and Acting Adjunct Surgeon.

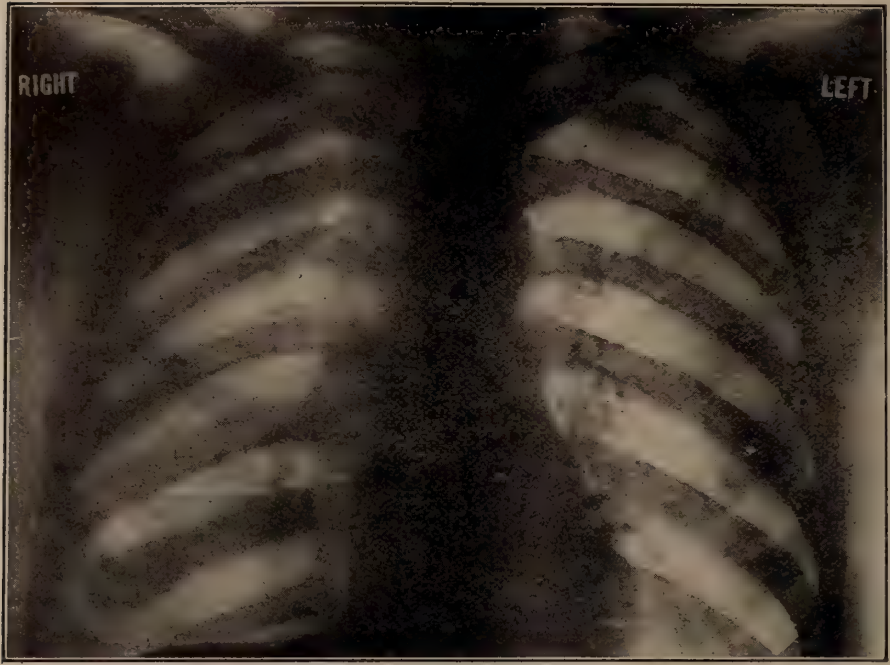

Fig. 1—Empyema complicating peripheral lung abscess. Note the level fluid line in the right chest and opacity near the apex. The air was admitted during the aspiration by the physician. Intrapleural fluid without air does not show a level line.

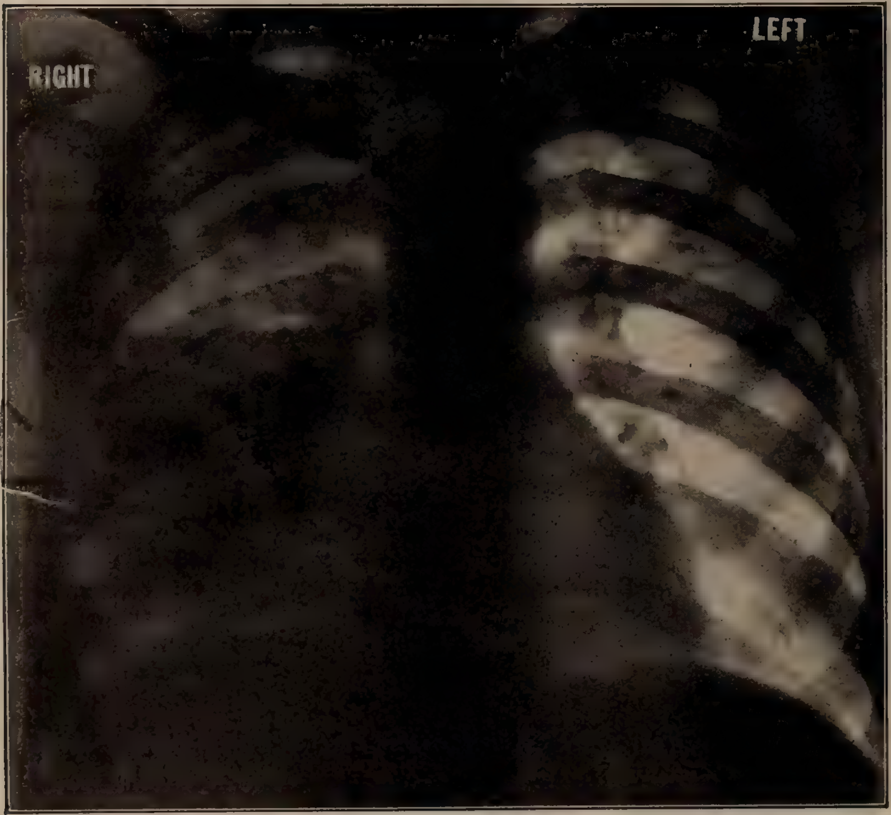

Fig. 2—Same case as Fig. 1 following resection of 9th rib and drainage. The lung abscess was operated upon later.

obliteration of the pneumothorax by fluoroscopy. Adhesions or confining membranes will often prevent the air from being expelled.

Relief usually follows this procedure and in some cases it is said that the fluid does not reaccumulate. Should the thorax refill, the fluid will probably be more purulent than it was before. Also there will be more lymph flakes and an exudate will have formed upon the lung and upon the mediastinal pleura so as to stiffen the mediastinum and prevent the dangerous back-and-forth flapping which occurs when a camparatively normal thorax is widely opened as in the large sucking wounds so often encountered in the casualties of war. The mediastinum being splinted, as it were by this exudate, drainage by a tightly fitting tube through a small intercostal incision may be practiced. An extension of this tube is submerged beneath a weak antiseptic fluid to prevent air suction into the thorax. In about a week more or less according to the condition of the patient, fluoroscopy in the erect position will demonstrate the efficiency of the drainage. Also the degree of possible lung inflation by coughing or straining will be clearly shown, the prognosis improving with the completeness of the distension. It must not be forgotten, however, that the lung cannot expand on coughing if the thoracic wound is plugged. If the cavity is a smooth single chamber it has been my custom to

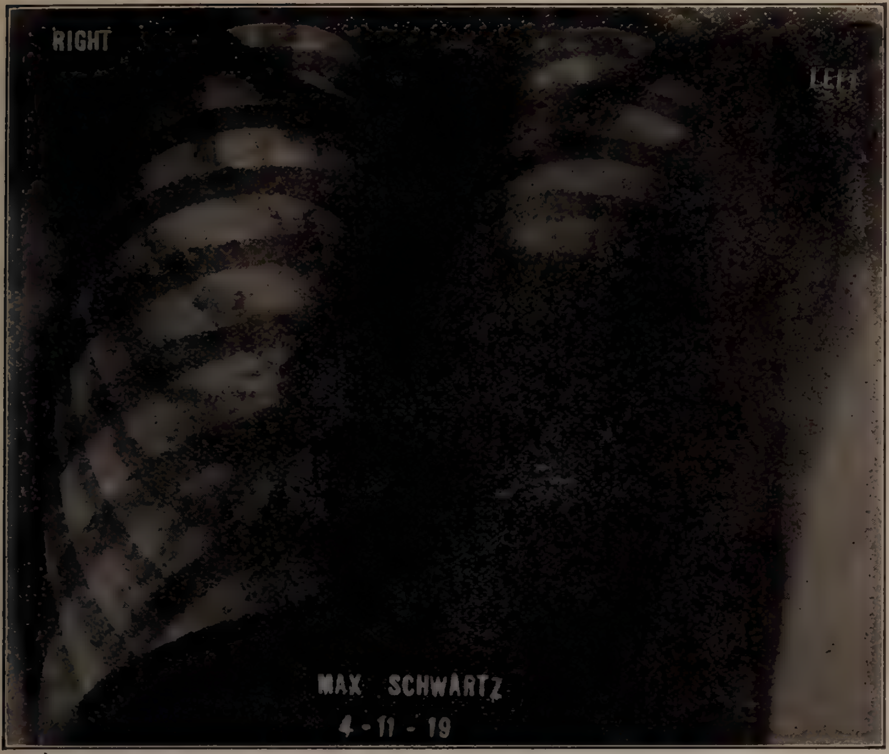

Fig. 3—Lung abscess with clear fluid exudate. Note pneumothorax at apex. Erect position.

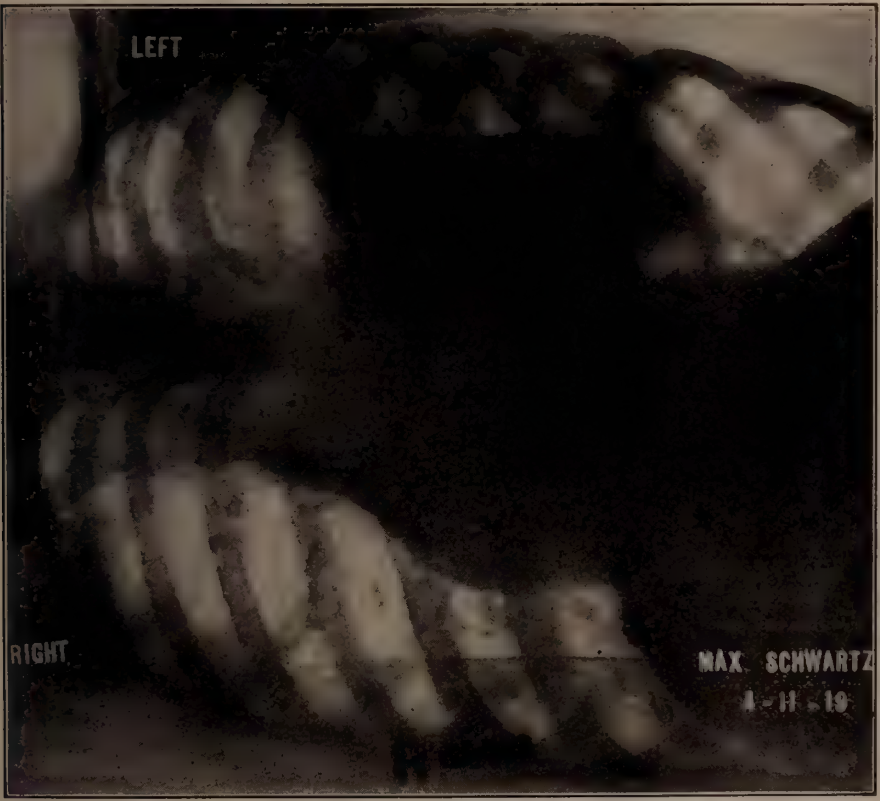

Fig. 4—Same patient as Fig. 3 but lying on his side. The fluid is now so distributed that it does not show as in Fig. 3 but the abscess shows, the surface of its contained fluid showing level line. Pneumothorax now distributed so that it is seen at the base as well as at the apex.

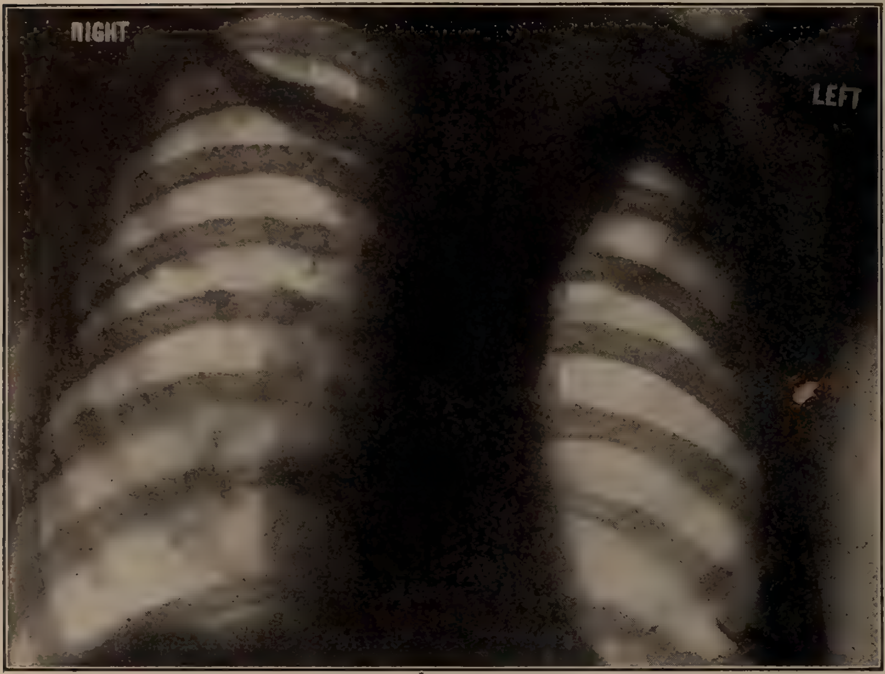

Fig. 5—Condition of patient first operated upon two years after diagnosis of empyema had been made. Note position of heart, enormous pneumothorax and collapsed fibrotic lung along the mediastinum.

employ from this time on the Carrel-Dakin method of disinfection, which it is unnecessary to describe here. If, however, there are secondary collections of pus and it becomes evident that the chest cannot be properly drained through this incision, it is my custom to open the thorax widely by a seventh interspace major thoracotomy, to spread the ribs with a mechanical retractor, to mobilize the lung and to drain all the residual pockets as described by me three years ago before this Association.*

The Carrel-Dakin method of disinfection is much more easily carried out after a major thoracotomy than it is through the small opening of minor thoracotomy.

Single sacculations of pus adjacent to the thoracic wall may be drained by the resection of one or two overlying ribs with the periosteum, the cavity healing like an abscess.

When during the course of healing a secondary collection of pus is discovered and when this secondary collection is a large one and easily reached by the needle from another part of the chest wall, it may be drained through a separate incision treating it indeed as a second empyema.

Since the postoperative roentgenological study of the chest has become popular some interesting facts have been brought to light. One of these is that a sterile pyopneumothorax in which the external wound has been permitted to close can disappear leaving scarcely a trace of disease. Figures 6 and 7 will illustrate this fact, which forms a strong argument for the Carrel-Dakin treatment. But these patients must be carefully watched, for if this sterility is not complete perforation into a bronchus may occur months after the external wound has healed. The writer has succeeded in securing a perfect and permanent wound closure in eleven days after a primary major thoracotomy *without* the use of the Carrel-Dakin method.

II. *Empyema of the Thorax complicated by Lung Abscess of Appreciable Size.*—Here in addition to the X-ray we have the striking symptom of the expectoration of large quantities of pus usually stinking in character. In the acute state these patients are usually very ill. Fever runs high and sepsis is marked. After a time, however, the patient adapts himself to the conditions and the case becomes a chronic one. Radical operation for the cure of the lung abscess is not advisable during the presence of the empyema and, indeed, the writer has seen numerous cases in which the lung abscess has healed after thorough drainage of the pyothorax. The correct procedure is the resection of a long piece of rib, say five or six inches in local anesthesia with its periostium. It is necessary to remove periosteum with the rib in order to prevent the quick regeneration of bone with the deforming bridges which interfere with drainage. The skin is first infiltrated with 1 per cent novocain to which adrenalin has been added in the proportion of 1 to 10,000 and the incision through the skin is then made. The thoracic wall is now infiltrated with ¼ per cent novocain and a trace of adrenalin over the space of three ribs. The muscles are then divided, the blood vessels being caught before they are cut and the rib is finally reached. One or two minims of the 1 per cent novocain-adrenalin solution may now be injected accurately into the costal groove where it comes in contact with the intercostal nerve. This is done at the posterior angle of the wound and it is necessary also to anesthetize the upper and lower border of the two ribs adjoining the one which is to be resected. Following this there is not the slightest pain. The thorax is opened widely and an excellent exploration is possible, although naturally one cannot inspect the entire cavity without the long incision and the rib spreader. Frequently the writer has seen and identified the opening into the lung abscess. This should not be drained by tube or gauze, however, because of the danger of erosion of intrapulmonary vessels and fatal hemorrhage. The fact that this form of empyema is not extremely rare may be well appreciated when it is stated that the writer has had no less than eight cases of this kind under his care within a period of two months. These abscess empyemas are apt to be infected by anaerobic organisms, and the pus is extremely foul, tending also to start a gangrenous pleurisy. The continuous insufflation of oxygen through a fine catheter into the cavity at the rate of about two bubbles a second, day and night for forty-eight hours has been of distinct value. Dakin's fluid cannot be used here because of the bronchial fistula which is practically always present. Unless the abscess is a chronic one the prognosis is not particularly bad, although complete healing may be delayed by the bronchial fistula which prevents the patient from distending the lung during his post-operative blowing exercises.

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* Recent Progress in the Operative Treatment of Empyema of the Thorax. Lilienthal and Ware, *Med. Record*, July 15, 1916.

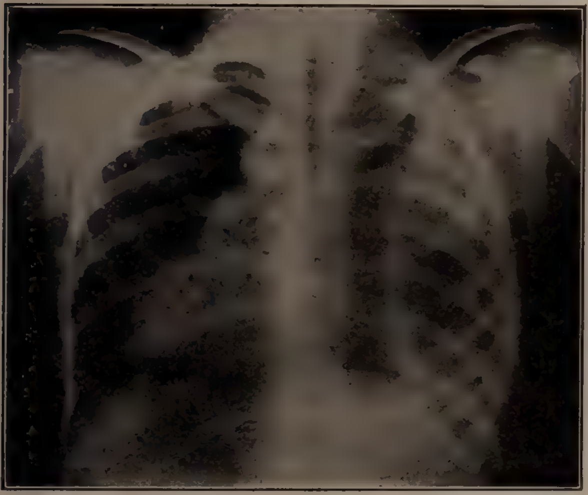

Fig. 6—Pneumothorax, the thoracic fistula having closed spontaneously without special treatment. Note asymmetry of chest and great collapse of lung.

I have found that instead of the blow-bottles usually employed to distend the lungs a rubber air pillow or ring, or even a football or a balloon may be substituted. A tube is fixed to the valve opening and around this tube a string is tied tightly so as to cause a stricture through which it is difficult for the patient to force the air. The apparatus is simpler to manage than the bottles, especially when there are many of these patients in the ward.

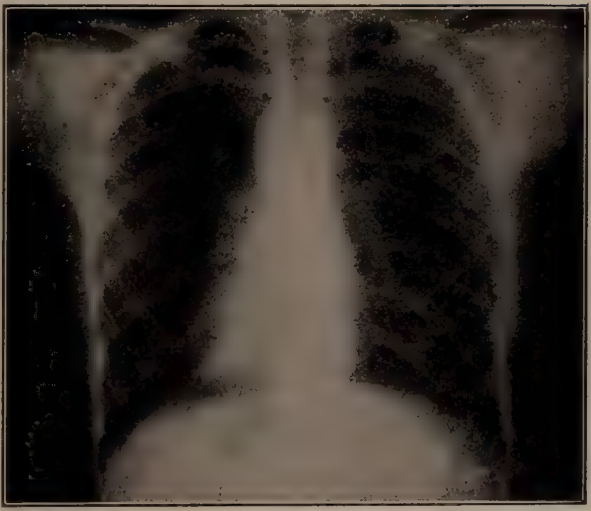

Fig. 7—Same patient (Silvia G.) less than one year later without further treatment. Chest nearly normal except for slight depression over seventh rib. The heart has returned to its normal position. (This is the condition striven for when the Carrel-Dakin method is employed. It was not used in this case.)

Convalescence may now be expected to proceed steadily, although it will be slower than when uncomplicated by a defect in the bronchial wall. Finally, when the cavity has practically disappeared and only the fistula remains, a single injection of bismuth paste (say 10 per cent or 20 per cent of subnitrate of bismuth in vaseline) will cause a quick closure of the wound. Should the bronchial aperture be a large one, however, and should it be so close to the surface that the mucous membrane meets the skin, a second operation for the purpose of loosening the bronchus and causing it to drop back into the chest will be called for before conditions will be ripe for the application of the bismuth paste. This condition, however, is fortunately rare.

III. *Chronic Empyema with Thoracic Fistula.*—In any case in which after weeks of treatment improvement is not progressive, full exploration of the thorax should be performed through an intercostal incision supplemented by division of ribs over the cavity. Further experience with this major exploratory operation has increased my confidence in it. Even when performed as a primary procedure when hyperacute symptoms would not have rendered it hazardous, conditions have frequently been found and relieved with resulting prompt cure which could not otherwise have failed to have prolonged the illness and to have greatly prejudiced the case. For example, in Base Hospital No. 101 at St. Nazaire, I demonstrated the method as a primary procedure in the presence of visiting officers from a neighboring hospital. Pus had been aspirated in the posterior axillary line, seventh interspace, following an acute pneumonia. The long seventh interspace incision with rib spreading disclosed an apparently normal pleura containing no fluid of any kind. The lung, however, did not collapse and on separating adhesions, an abscess, or rather a sacculated empyema, was discovered at the apex and another containing much thicker pus was evacuated from beneath the lower lobe, the under surface of which was broadly adherent to the diaphragm. A good recovery followed.

In another case, operated upon Base Hospital No. 3, at Monpont, there were discovered four distinct encapsulated empyemas; one at the apex, one at the base, one at the external costal side and the fourth on the mediastinal side. This patient also made a prompt recovery. It is inconceivable that either of these two cases would have been properly treated by any other kind of operation and they are mere examples of many. I have observed that these multiple sacculations are commoner in adults than they are in children although they are far from unknown in the latter cases. For the past year I have been treating these major thoracotomy patients by the Carrel-Dakin method to their comfort, and perhaps also shortening the period of recovery. As to pinning my faith to the method of Carrel, however, I can but say that his principles must be absolutely and religiously adhered to if we are to have good results, and the first principle is that the solution must reach every part of the diseased area. When subsidiary cavities exist, it is self-evident that the solution cannot reach every part through the ordinary wound made for the draining of pyothorax. Also the complete filling of the thorax with the Dakin's solution or with any other liquid is dangerous. Indeed, the very slightest tension by fluid injected from without has been followed by instant death, as has also the irrigation of the thoracic cavity at any stage whatever of suppurative disease whether the cavity was rigid walled or not. The filling of the thorax by any fluid is absolutely forbidden, a free exit being imperative in all cases.

IV. *Traumatic Empyema.*—Broadly speaking this may be divided into two classes: (a) Empyema resulting from direct infection from without but without hemothorax, and (b) Infected hemothorax. I shall not here go into the description or discussion of wounds of the chest, for this would exceed the limits of my paper. I will say, however, that from a considerable experience in this field, I conclude that an infected hemothorax is one of the most dangerous forms of empyema. It is as a rule unilocular and mere drainage is simple; still, in spite of the most careful therapy, including the regular Dakin's fluid instillation, the proportion of fatalities has been extremely high. I have also seen gas gangrene of the pleura and chest walls, a peculiarly distressing and dangerous complication. Gas gangrene of the lung, however, is very rare, that organ having apparently an immunity against the anaerobes which normally inhabit the larger bronchi.

Summary.—1. Empyema must be treated on surgical principles and according to its etiology and gross morbid anatomy.

2. The Carrel-Dakin method may be employed with excellent results when the cavity is simple and the lung expansile. It is not to be used in complicated cavities when the tubes cannot be made to reach every part. The external healing which covers in a supposedly aseptic pyopneumothorax with nondistensible lung may be followed by serious complications.

3. Wide surgical exposure with lung mobilization promises sound healing in about four weeks in a large proportion of otherwise hopeless cases.

4. Major thoracotomy and lung mobilization is applicable in acute cases as a two-stage operation and should be practiced early when complicated or multiple cavities are suspected.

5. Post-operative vertical or lateral fluoroscopy is demanded as a factor in deciding upon further operative measures.

Discussion.

Dr. F. S. Wetherell, Syracuse: An important point which Dr. Lilienthal has called our attention to, is the possibility of multiple empyema pockets. Too often the main, large pocket in the lower portion of the pleural cavity is drained and the work thought to be complete. This large pocket may close. The patient, however, finds that he does not regain his normal weight and, if daily temperatures are taken, a slight daily rise is found. This is an almost certain indication that an empyema pocket is present elsewhere in the chest. Extremely careful physical examination is necessary in locating this pocket—the X-ray aiding greatly in the diagnosis.

Another important point which should be emphasized is the advisability of delaying thoracotomy in early empyema until aspiration reveals frank pus. The early fluid in the chest is a detriment to the patient only to the extent in which it embarrasses the respiration and circulation. The toxemia of the pneumonia is at this time still of paramount importance. If therefore we do a thoracotomy, causing at this time a hyperacute pneumothorax, we greatly increase the already existing circulo-respiration embarrassment and more often than not the patient survives this operation less than twenty-four hours. Simple needle aspiration of the fluid, in a quantity sufficient to relieve the patient's respiration, practised daily or even twice daily, until the pus has been walled off by adhesions which prevent collapse of the lung, is the rule which should be invariably followed.

In the early empyema—simple incision is sufficient—excision of a rib or more being really necessary only in chronic empyema where the chest wall has collapsed allowing the ribs to practically approximate.

In Dakin's solution we have an invaluable aid in the treatment of both acute and chronic empyema. Time will not permit a detailed discussion of the technique, which roughly is as follows:

First. Obtaining correctly made Dakin's solution and correctly made Carrel tubing.

Second. Institution of dependent drainage.

Third. Careful, daily, instrumental dressings.

Fourth. Bacteriological control, preferably by culture.

In chronic empyema a properly carried out Carrel-Dakin technique will eliminate a high percentage of so called "Chest Collapsing" operations with their attendant high mortality.

A cavity found sterile by culture and remaining sterile for seven days, as shown by daily culture, may be considered sterile and the treatment discontinued. A simple dry dressing is placed over the wound which closes by granulation—the cavity being gradually occluded by the expanding lung and the other factors that enter into the mechanism of chest cavity occlusion.

THE ATROPIN TREATMENT OF PYLORO-SPASM AND PYLORIC STENOSIS.*

By SIDNEY V. HAAS, M.D.,
NEW YORK CITY.

THERE are several diseases of obscure etiology peculiar to infancy, the chief symptoms of which are referrable to the gastroenteric tract. These are hypertrophic stenosis of the pylorus and spasm of the pylorus. The clinical picture of both is so well known as to warrant only the shortest description.

An infant born apparently normal, progressing more or less favorably in its feeding and nutrition, begins after from two to four weeks to vomit with force, usually immediately after feeding, occasionally retaining one or two nursings, and then vomiting all or what seems to be all of these. There is usually visible peristalsis of the stomach, sometimes of the intestines, more or less constipation, with rapid loss of weight, and when hypertrophic stenosis exists a mass may be felt in the pyloric region, usually described as spool or olive shaped, which ordinarily is found above and to the right of the umbilicus.

A careful consideration of the possible etiological factors of these so closely allied conditions would seem to point to a disturbance of physiological function of the vegetative nervous system, and clinical experience would seem to justify the hypothesis that disturbance in function of the vegetative nervous system is the chief, if not the only factor in their etiology. Under this hypothesis hypertrophic pyloric stenosis is considered as simply an advanced degree of pyloro-spasm. This does not gainsay the existence of pyloric stenosis of organic origin, but does refer to the many cases of hypertrophic stenosis so liberally reported in the literature as requiring operation for their relief.

In what follows there is no desire to minimize the brilliant results of operation in the hands of many able surgeons or to suggest that operation may never be required, but that surgical procedure should be a rarity for this condition, and not to be practised until atropin has been given a trial.

Pyloro-spasm and pyloric stenosis are simply the dominant features of a general state of hypertonicity which has been described elsewhere under the caption of the "Hypertonic Infant" [1] and from which the following description is taken:

"The Hypertonic Infant is a definite clinical entity. It is characterized by hypertonicity of all the skeletal muscles, as shown by the ability to raise the head and grasp objects even in the early days of life, and by general spasticity. The hollow viscera show increased activity of their smooth muscle fibers. This expresses itself in the form of spasm involving practically every part of the digestive tube, and, depending on the region, presents the symptom of colic, visible peristalsis, vomiting, constipation, or any combination of these. Accompanying these symptoms is marked psychic irritability, expressed by insomnia, general restlessness and crying. The hypertonic infant belongs to the spasmophilic group and presents the symptoms of vagotonia.[2]

"Its recognition is of importance in this, that while presenting symptoms in the main of disturbances of nutrition, food regulation alone does not correct the fault, whereas treatment by the drug atropin is followed by rapid subsidence of symptoms, the results being so prompt and regular as to constitute specific action. The tolerance for milk, which is usually low in these infants, is at once materially increased, so that a normal amount may be utilized—a condition quite opposed to that existing before the atropin was begun."

The varied picture, the numerous symptoms, the irregularity of their onset, course, and termination, definitely place this syndrome in the realm of perverted physiology. It is difficult to conceive that anything short of a system could be at fault; for although there is a disturbance of metabolism, no particular gland dysfunction is capable of explaining this phase. No ductless gland or combination of ductless glands can be reasonably thought of as a cause. On the other hand, in favor of the vegetative nervous system as the prime etiologic factor, we have the disturbance of temperature, usually below normal, cyanotic and cold extremities, or extreme pallor of the face, over action of the involuntary muscles, the disturbed metabolism due to the imperfect glandular action under the control of the vegetative nervous system.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 6, 1919.

The involuntary nervous system is composed of two parts. Fibers from each are believed to supply all the organs of the body. They represent a regulating mechanism and in a state of health are in balance. The autonomic or activating portion is carried from the third, seventh, ninth, tenth and eleventh cranial nerves and in the viscero-pelvic nerve. It is also referred to as the vagus group or system. The sympathetic or inhibiting fibers are to be found in that portion of the vegetative nervous system not included in the above. An excellent short review of the vegetative nervous system from a clinical aspect is that of Julian M. Wolfsohn.[3]

The question of differentiating pyloro-spasm from pyloric stenosis has been much discussed. At the present moment the weight of authority would seem to indicate that pyloro-spasm and pyloric stenosis are two definite clinical entities. But this is by no means a general opinion. Holt[4] believes that hypertrophy is always present before the spasm, and in this way accounts for the interval of weeks from the time of birth until the onset of symptoms, the symptoms not occurring until the element of spasm has been added. In furtherance of the argument attention is called to the existence of the large, cartilaginous hard mass which it is difficult to conceive of as originating from simple overactivity of the parts and to the persistence of this mass long after a cure has been obtained by operation or otherwise. A personal experience leads to the contrary view, that pyloro-spasm and pyloric stenosis are not two definite entities, but simply phases of one, although it is fully recognized, that rarely, true organic tumors of the pylorus are found in infants. In support of this viewpoint may be mentioned that all cases of pyloro-spasm coming under observation during the last four years have responded to treatment with atropin, although among the cases are not less than four for whom operation was advised as the only means of relief. The results were so definite that it seemed justifiable to predict that pyloric stenosis would undoubtedly respond in a similar manner, and when the first case of absolute stenosis did come under my observation the cure was just as prompt as had been those of pyloro-spasm. In further support of this viewpoint may be mentioned the case of Ransohoff and Woolley[5] in which with an onset at three weeks and a Rammstedt operation at ten weeks in which a tumor was found 2 cm. long by 1 cm. thick, of cartilaginous hardness, the infant made an excellent recovery but died at the age of 7½ months from a large thymus; at the autopsy the pyloric orifice was found to be normally dilated, and there was an entire absence of pyloric tumor mass. Dr. B. K. Rachford[6] states "that if the pyloric sphincter is so cut as to leave the pyloric orifice patulous and prevent muscular spasm of these fibers, the pyloric tumor disappears entirely, and this occurred within a few months." And again, Dr. Alfred A. Strauss[7] states "that his experimental work demonstrated to his complete satisfaction that it is impossible to form a pyloric tumor unless some experiment can be devised whereby the independent rhythmic snakelike contraction of the pylorus can be reproduced.

"Dissection of 65 tumors at operation showed that the tumor was absolutely proportionate in size to the age of the infant, which demonstrates that the tumor must be a progressive developmental affair." The histology of these tumor masses showing only an hypertrophy and no fault in arrangement of the normal elements speaks loudly in favor of a functional creation.

Rogers[8] states that in fatigue the inhibitory impulses of the sympathetic system fail and the vagus, then capable of overaction, results in hypersecretion, hyperacidity and hypermotility or pyloro-spasm. If spasm can be localized with reasonable certainty in the pylorus even when no ulcer exists, a wide division of the circular muscular fibers at this point as can be done by a Finney operation, is a logical mechanical treatment, and is applicable under the proper conditions, even when no ulcer is found. When ulcer is not present experience has proved that the results of the usual gastro-jejunostomy are disappointing.

Among the arguments used against the medical treatment of these cases is the sudden death which not infrequently occurs. Sudden death does occur in these cases, and almost invariably presents the picture of thymus death, but this occurs in infants who have been operated upon as well as those who are medically treated.

Upon the hypothesis that the vegetative nervous system is at fault, the use of atropin presents itself at once as one of the rational therapeutic agents, since it paralyzes the vagus endings. That it is the only one is not to be supposed. The use of atropin in this field is not unknown, but there has always been a misapprehension of the dose of atropin which an infant can tolerate in this condition. Atropin has been used with success in convulsions in children,[9] in pyloro-spasm,[10] in the exudative diathesis,[11] and other states, but certain important considerations have interfered with a proper appreciation of its value. A notable fault is the inconstancy of the therapeutic value of atropin, which is not less than that observed in various preparations of digitalis. Another is the rapid loss of pharmacologic power.[12]

The clinical experimentation with atropin has shown remarkably consistent results. The following factors are absolutely essential in attaining success: 1st, an active preparation of atropin; 2nd, a renewal of this preparation before too great deterioration; 3rd, sufficient dosage.

The treatment of the condition under discussion is pursued in the following manner: A solution of atropin, 1-1000 is prepared, and the first dose is one drop or 1/1000th of a grain to be put into feeding, if bottle fed, or to be given in a teaspoonful of water preceding a feeding, if breast fed. If there is no idosyncrasy to the drug, the dose at the next feeding is two drops, and this dose had better be continued during the next twelve hours unless there is an entire absence of improvement when a larger dose may immediately be used. Thus at the end of twenty-four hours one may be using three or four drops with each feeding. If after twelve hours more this has not proven effectual and there is no flushing of the face or other symptoms of physiologic saturation, then the dose is to be increased by one drop at each feeding until the symptoms are satisfactorily controlled. I have used, as I shall show you in the chart later, six drops at each feeding (42 drops in seven feedings), or gr. 1/24 in 24 hours, in an infant two weeks old. Atropin must be continued for a variable time, in some cases only a few weeks, in other cases for many months, and only the lowering of the quantity or entire omission from time to time will demonstrate that it is no longer necessary.

The toxic or physiologic reaction from the use of atropin in infants are in the order of their frequency.

Flushing or reddening of the face and body, which may vary from a faint pinkness to a scarlet fever appearance, giving the impression that the child has fever.

Midriasis—the pupils dilated—no reaction to light.

Temperature taken at this time frequently shows a rise from ½ to 2 degrees Fahrenheit.

Dryness of lips and mouth and inability to secrete tears.

Irritability and quick jumpy movements are not uncommon.

Pallor and drowsiness sometimes occur.

None of these symptoms is in the least dangerous and disappears promptly upon discontinuing the drug for a few doses.

Hypertonic infants tolerate unusually large doses of atropin safely.

Infants who cannot tolerate at least gr. 1/2000 six to seven times daily will probably not be benefited by the treatment.

A common dose of atropin for an infant of the hypertonic type from a few weeks to a few months of age is 1/50 to 1/25 of a grain in 24 hours with an extreme of gr. 1/16 in 24 hours. A number of charts will be thrown upon the screen to illustrate several cases.

Examples of three types of the hypertonic infant will be given: 1st, the hypertonic infant without pyloro-spasm; 2nd, the hypertonic infant with pyloro-spasm; 3rd, the hypertonic infant with hypertrophic pyloric stenosis.

1st. Roger F., born July 14, 1915, kindly referred by Dr. Simonson; birth weight 6.10 pounds. Present complaint, vomiting, crying, insomnia and constipation; no gain recently. This case had been seen by no less than four prominent pediatrists and at the end of five months it was losing steadily and presented the above symptoms. Of the many changes in diet it was possible to collect data of the following eleven: (1) Breast; (2) breast, barley water (3 months); (3) breast, top milk 9½, dextrinized barley water milk 10½ (fourth month); (4) top milk, 8 ounces; barley water; (5) top milk 24 ounces; (6) skim milk; (7) milk, sugar, water; (8) condensed milk 1:10; (9) top milk mixture peptonized; (10) malt soup; (11) protein milk.

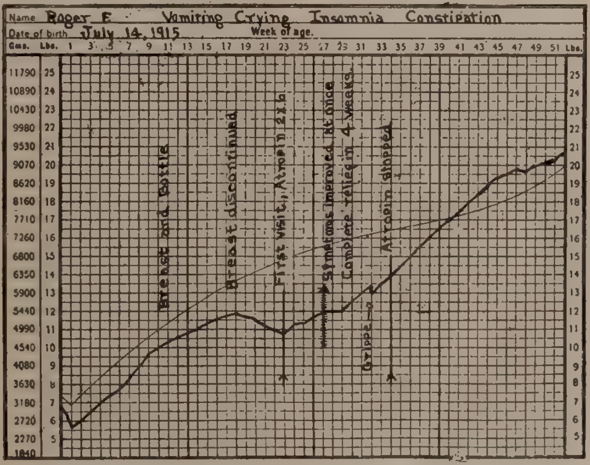
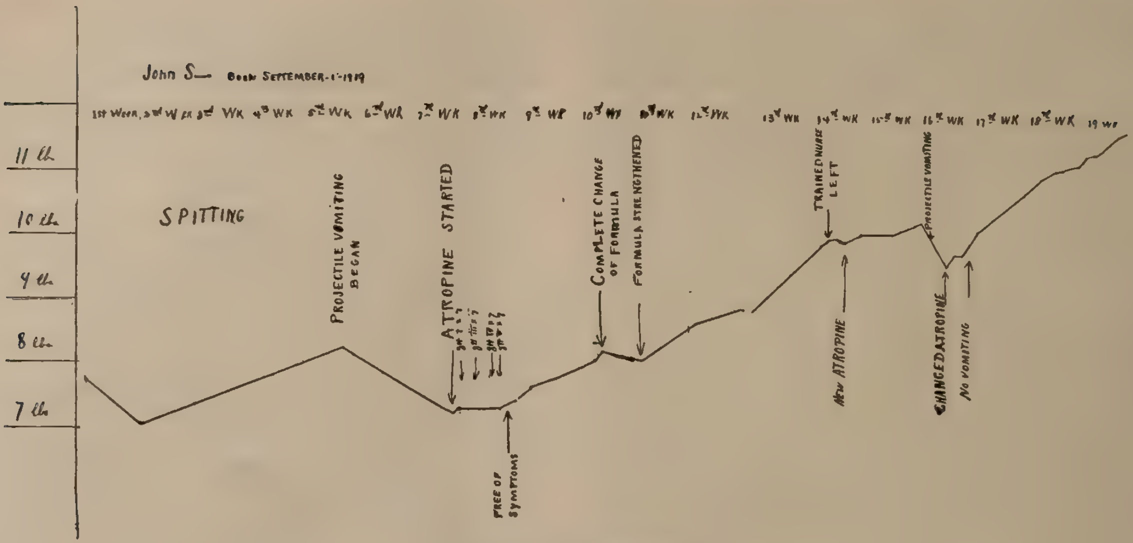


Chart 1 (Case 1).—Weight chart of Roger F. Hypertonic Infant.

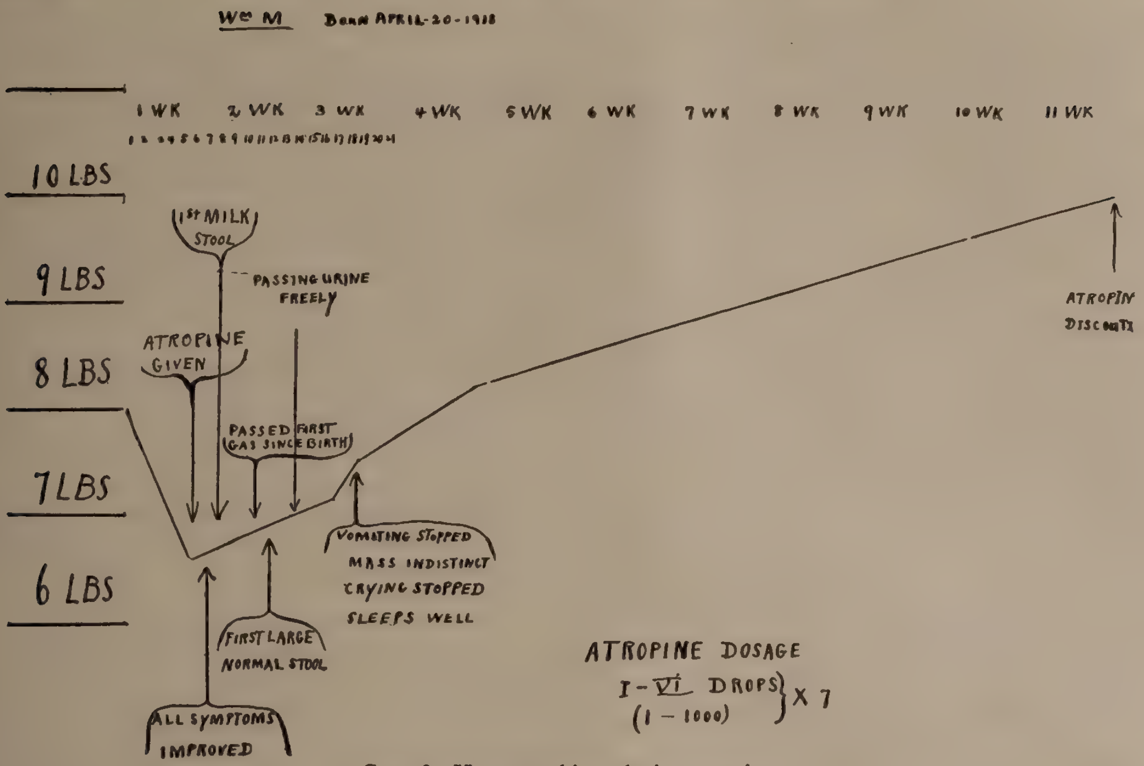
The child presented the picture of marked rickets, screamed constantly, was said never to sleep, and vomited continually, not projectile—no visible peristalsis. As the chart shows, at the first visit on December 23, 1915, the child was five and a half months old; the weight was eleven pounds. He was placed on a formula of full milk 20 ounces, granum ½ ounce, maltine ½ ounce and water 16 ounces, 6 ounces every four hours, with two drops of atropin at each feeding. On the 28th of December he was sleeping well, was comfortable, with some spitting; still constipated; marked gain in weight. On January 28th the symptoms were entirely relieved; weight was 12.9 pounds. On March 28, 1916, at the age of 8½ months, the baby weighed 15.8 pounds. There were no symptoms of any kind. Atropin had been stopped ten days previously.



Case 2—Pyloro-spasm.

2nd. Case of pyloro-spasm, baby John S., kindly referred to me by Dr. I. L. Hill; born September 1, 1918. It was the first baby, forceps being required for delivery. The birth weight was 7.11 pounds. The baby was first seen on the 13th of October at the age of six weeks. By October 3rd the weight had risen to 8.1 pounds on breast feeding. At this time it began to spit and soon was vomiting. The vomiting was projectile in character; the bowels had become constipated, and the baby cried constantly. The weight at the first visit was 7.1 pounds. Treatment up to this time consisted of feeding the baby part breast and part evaporated milk, properly diluted, feedings preceded by small doses of paregoric, the child being maintained in a semi-upright position. These procedures had been of no avail, the condition appeared to be growing worse daily, and the gastric peristalsis was the most marked I had ever seen. No change was made in the diet or regimen, but atropin, one drop of 1-1000 solution was administered before each feeding. The first dose was given at 3 P.M. It vomited the 6 P.M. feeding, and retained everything after that. On October 15th it weighed 7.4 pounds. There was no vomiting, no crying, was able to take 3 ounces of food for the first time, and the bowels had moved regularly during the last two days. The symptoms were all tremendously improved with the exception that no further gain was made. But when four drops were used the gain was rapid. The character of the feeding was not changed until the first of November, at which time the baby weighed 8.2 pounds. There was still occasional projectile vomiting, perhaps once in several days. The peristalsis was still marked, but the child no longer cried and was apparently perfectly normal. At this period when the infant was asleep the fingers and the finger nails were white. The thymus appeared markedly enlarged by percussion. The further history of the case shows some points of marked interest. While making satisfactory progress the trained nurse left. At about this time the weight flattened and the baby became irritable, the peristalsis increased, with occasional spitting, and sleep was disturbed. This was ascribed to the fact that the mother having full charge of her baby for the first time had become nervous, and this condition was reflected in the baby. However, as the days passed with no improvement the nurse was recalled and 24 hours after she was back on the case all the symptoms witnessed at the first visit—crying, projectile vomiting, sleeplessness, visible peristalsis, presented themselves. The loss of weight was rapid, dropping from 10.3 pounds on December 16 to 9.8 pounds on December 19th. The gastric peristalsis was of such a character that it was possible to grasp the stomach in the hand as though it were a ball, so rigidly outlined and so protuberant was it. An analysis of the case at this time showed that when the weight began to flatten out atropin from a new supply had been given the baby. Atropin from another source was obtained and with the administration of the first dose the symptoms began to improve until after four days they had entirely disappeared. This case also illustrates another point and that is the symptoms were not entirely controlled until the required dose, in this case five drops of 1-1000 solution, was used. Now at the age of eight months the baby weighs 19 pounds. It still requires two drops of atropin at each feeding.

3rd. Case of hypertonic infant with hypertrophic pyloric stenosis; William M. seen in consultation with Dr. A. W. Roff; born April 20th, 1918, of healthy parents, was the second child; the first had been a normal, breast fed baby. Labor was normal, no asphxia. Birth weight,



Case 3—Hypertrophic pyloric stenosis.

8½ lbs. (estimated). Physical examination negative. The only unusual feature was vomiting before ever having been put to the breast. From that time to the present (April 25, 1918) the baby had vomited everything, sometimes immediately after the feeding, sometimes an hour or more after.

Attempts had been made to improve the condition by increasing the intervals, reducing the amount at each feeding, diluting, by preceding the nursing with water, by giving small doses of olive oil before feeding, by clearing the gastro-intestinal tract with castor oil.

The infant cried constantly; never slept and was emaciating rapidly.

There had been no food stools; no gas had been passed per rectum; there had been no urination; projectile vomiting about seven times daily.

The physical examination of April 25th showed an infant which had apparently lost considerable weight, the estimated loss in weight since birth being from 1½ to 2 pounds.

Shortly after a breast feeding there was a profuse projectile vomiting. The abdomen showed distinct peristaltic waves. In the region of the pylorus could be felt a small mass.

The stools were greenish black mucus containing bile. The character had not changed since the meconium was expelled and even now the stool looked not unlike thin meconium excepting for the mucus it contained.

The diagnosis of congenital hypertrophic pyloric stenosis was undoubted with the single reservation of the remote possibility of a congenital atresia of the duodenum.

The treatment suggested was a breast feeding for five minutes every 2½ hours preceded by the administration of one drop of a 1 to 1000 solution of atropin sulphate in one dram of water, to be increased daily by one drop at each feeding until physiological effects were observed.

The first dose was administered at 4 P.M. The six o'clock feeding was retained somewhat better than any previous feeding; according to the mother the crying, which had been constant, diminished, and during the next forty-eight hours, although there was some vomiting after almost every feeding, there were only three or four times in each twenty-four hours, when the amount was large and the character projectile. A very marked improvement.

Forty-two hours after the atropin was begun the first trace of milk stool was noted. Six hours later another stool showed somewhat more fæcal matter. The crying had practically diminished to normal. The infant slept more.

April 28.—Weight 6 lbs. 12 oz. (1st weighing) projectile vomiting, three times in twenty-four hours, receiving atropin 2 drops at each feeding. Increased to 4 drops at each feeding.

April 30.—Slight vomiting, three times; projectile vomiting once in the past twenty-four hours. Passed gas for the first time since birth.

May 1.—First large normal stool; no projectile vomiting; now receives 5 drops of atropin at each feeding; gr. 1/25 in 24 hours.

May 3.—Began passing urine freely.

May 6.—Weight 7.2 pounds.

May 7.—Until this date had occasional vomiting, and on this day once projectile.

May 8.—Passed more gas; bowels move four to five times daily; nurses seven to ten minutes every three hours.

May 10.—Weight 7.8 pounds. Sleeps well; does not cry; rarely vomits; not at all in the past two days. Bowels move normally; stools of proper consistency and yellow. Physical examination still shows visible peristalsis. Doubt as to presence of mass. Receives atropin 6 drops seven times daily (42 drops of a 1-1000 solution) about 1/24 grain of atropin sulphate each twenty-four hours.

May 19.—Weight 8.3 pounds; gain 11 oz. in a week.

June 2.—Nursed every 3½ hours for 15 to 20 minutes; received drops before each nursing except at two nursings when drops were omitted. In past week has vomited twice at the two feedings when drops were omitted.

August 1.—Age 14 weeks. Weight, 11.3 pounds. Atropin was gradually reduced until three weeks ago when it was entirely omitted without recurrence of symptoms.

Summary.

1. Hypertrophic pyloric stenosis is probably only an advanced degree of pyloro-spasm.

2. Both being manifestations in the syndrome of hypertonia (Hypertonic Infant).

3. The etiology is probably a disturbance in the physiologic action of the vegetative nervous system.

4. The vegetative nervous system is made up of two parts, the autonomic and the sympathetic; normally in balance, in this condition however there is an overaction of the automatic, or vagotonia.

5. This does not gainsay the occasional existence of true organic stenosis of the pylorus.

6. Despite the brilliant results of many surgeons with the Rammstedt operation. An operation should be rarely required, and performed only after atropin has been given a trial.

7. Atropin properly used has been regularly effective in producing a cure.

8. At the present time the weight of authority would seem to indicate that hypertrophic pyloric stenosis and pyloro-spasm are two definite clinical entities.

In favor of this view is the existence of a cartilaginous hard mass at the pylorus in cases of stenosis, and the persistence of this mass long after a cure has been obtained by operation or otherwise.

a. Against this view is the personal experience of the last four years, all cases of pyloro-spasm, including four for whom operation had been advised, responded to treatment by atropin. A case of complete stenosis responded equally well.

b. Ransohoff and Woolley held an autopsy on an infant at 7½ months which had had a Rammstedt operation at the age of two weeks when a cartilaginous hard mass existed. At the autopsy this was absent and the pylorus patulous.

c. Ratchford states that if the pyloric sphincter is so cut as to leave the orifice patulous and prevent muscular spasm of these fibers the pyloric tumor disappears.

d. Strauss, in a dissection of 65 tumors at operation, showed that the tumor was absolutely proportionate in size to the age of the infant, "which demonstrates that the tumor must be a progressive developmental affair."

e. The absence of fault in the arrangement of the normal histologic elements of these tumors speaks loudly in favor of a functional creation.

f. Rogers states that in fatigue the inhibitory impulses of the sympathetic system fail, and the vagus, then overacting, causes hypersecretion, hyperacidity and hypermotility or pyloro-spasm.

9. Among the arguments used against medical treatment is the sudden death, which not infrequently occurs. These are usually thymus deaths, and occur in cases operated as well as those medically treated.

10. Atropin is the logical treatment in these cases owing to its paralyzing effects upon the vagus nerve endings.

11. Certain facts must be borne in mind regarding atropin.

a. The inconstancy in value; resembling digitalis in this respect.

b. Its rapid deterioration.

c. It must be used in sufficient dosage to be effective.

12. A common dose of atropin for an infant of this type from a few weeks to a few months of age totals gr. 1/50 to 1/25 in 24 hours, with an extreme of gr. 1/16 divided among the day's feedings, a 1-1,000 solution being used, beginning with one drop and increasing rapidly until effective.

13. The most frequent toxic symptoms are flushing, midriasis, and dryness, which disappear promptly when the drug is withheld. There is no danger even when such symptoms present themselves.

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CHILD WELFARE WORK IN MASSACHUSETTS.*

By **RICHARD M. SMITH, M.D.**,
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ONE of the most obvious results of the war has been the general and widespread interest in problems of public health, and child welfare has received its share of this interest. The feeling of sacrifice and service, which the war has stimulated, is being directed toward the peace problem of insuring public health. Physicians and laymen alike have been devoting time and energy in order that plans might be perfected to develop this work.

Public health work, child welfare included, is of two types—public or official and private or voluntary. One of the most pressing matters in connection with the expansion of child welfare work is the co-ordination of these two kinds of activity. Private endeavor frequently antedates the work of public officials. It is extremely well done in many communities but often is narrow in its vision. The work of public officials is usually developed slowly except in a few of the large cities and except when under political influence is founded on a broad basis and permanent in its character.

In Massachusetts child welfare work had been done by private organizations in various parts of the state for a good many years. It received official recognition with the reorganization of the State Department of Health, and the appointment of Dr. Allan J. McLaughlin as Commissioner in 1914. At that time the Division of Hygiene was established and Professor Gunn was placed in charge. He outlined some of the general work of the Division of Hygiene with reference to child welfare and secured the publication of a book on the care of the baby.

In 1916 Dr. Lyman A. Jones was appointed Director of the Division of Hygiene and he developed still further the general state-wide plan for furthering child welfare work. This was done through exhibits, through literature and through a series of prenatal letters, which were sent to all expectant mothers whose names were given to the Department.

Under the stimulus of the war and the realization that child welfare work must be developed to an even greater degree, Dr. McLaughlin appointed a special committee on child conservation composed of two members of the public health council, Dr. David L. Edsall and Dr. William J. Gallivan and the Director of the Division of Hygiene, Dr. Lyman A. Jones. He also appointed an Advisory Committee composed of non-official individuals representing the various child welfare interests in the State. On this Advisory Committee were two pædiatricians, one obstetrician, a public health nurse, a representative of the Council of National Defense, a representative of the Red Cross and two physicians interested in problems of delinquency and feeble-mindedness.

The members were as follows: Miss Mary Beard, Dr. Robert L. DeNormandie (Dr. John B. Swift, substitute for Dr. DeNormandie April 9 to August 5, 1918), Dr. Walter E. Fernald, Dr. William Healy, Mrs. W. H. Lathrop, Miss Gertrude Peabody, Dr. Richard M. Smith and Dr. Fritz B. Talbot.

This Committee applied to the Red Cross for funds to carry on a state-wide campaign. The request was not granted by the national association but was granted by the Boston Metropolitan Chapter. This was done because the Chapter recognized two years in advance of national headquarters that child welfare work was essentially a war measure and that Red Cross funds might be expended properly for public health work. The Red Cross paid the salary of eight nurses who were appointed and made directly responsible to the Committee. Governor McCall was also appealed to for funds to pay for traveling and other incidental expenses of the nurses. Five thousand dollars was given by him for that purpose. The incidental expenses of the Committee, such as stenography and stationery, were borne by the State Department of Health.

The Committee through its eight nurses began immediately to make a survey of the State of Massachusetts in order that we might determine what was actually being done for infants and children by public officials and by private organizations. With this survey as a basis, the Committee made recommendations for further development of child welfare work. The recommendations went through the Commissioner of Health to the local boards of health and directly from the Committee to the local Child Welfare Committees. These local committees were organized throughout the State as a part of the general plan. They were appointed through the agency of the Council of National Defense and contained in their personnel the same type of representatives as that of the Advisory Committee appointed by the Commissioner of Health. It was felt that by the appointment of a special committee on a more or less war basis, it would be possible to draw together all the groups of the community interested in child welfare which in some cases at least had been working previously at cross purposes. Results have justified this cause.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 7, 1919.

The Committee attempted in its recommendations to do two things—first, to stimulate general interest throughout the state in problems of child welfare, and, second, to make definite suggestions for work in particular communities.

The general campaign of education included public meetings, the distribution of literature and many personal interviews with prominent public officials and private individuals. In some instances the nurses attended town meetings in order to urge appropriations for public health nurses.

The Committee also prepared literature for general distribution. An article was written on the diet of children from two to six years of age for the special use of nurses and others interested in providing satisfactory food for children of this age. A pamphlet was also prepared on the care of the baby in hot weather.

Specific recommendations varied in different communities, but the Committee undertook a definite campaign to establish the necessity for special training for nurses who were to do public health work. It was found frequently that the nurses employed by the local boards of health or by private organizations, had only the ordinary hospital training. The Committee realized that if efficient child welfare work was to be done, it could be done only by properly trained individuals.

In some instances the Committee aided the local communities in raising funds, but in general each community assumed its own financial burden.

In addition to the meetings held throughout the State, there were several large meetings in Boston and in other important centers. At these meetings members of the Committee, the nurses, the officials of the State Department of Health or of the local boards of health, or members of the local child welfare societies spoke. All this work was done in close co-operation with the District Health Officers who are the local representatives of the Commissioner of Health.

The Committee also interested itself in day-nurseries. We found that the number of day-nurseries was beginning to increase because of the temptation for women to earn high wages in the mills. In this work the Committee co-operated with various other organizations. A bill was presented to the Legislature this year with the backing of the Committee, asking that authority be given to the State Department of Health to inspect day-nurseries and to establish minimum requirements for equipment and care. This bill was favorably reported by the Committee but unfortunately was amended on the floor of the House giving the authority to the local boards of health.

The Committee has been interested in supporting a bill now before the Legislature which provides for physical education in public schools. There is also a bill before the Legislature which the Committee supports in principle, though not in all of its details granting maternity benefits.

At the request of the State Board of Education the Committee prepared an outline on child welfare which is being used in the vocational and evening schools conducted by the Department of Education. This outline has been favorably received and many copies have been printed.

At the end of the first year's work of the Committee, the Department of Health published a "Child Conservation Bulletin" reporting the accomplishments of the year. The bulletin contained also general articles on child welfare by various members of the Committee.

There has been organized recently in Massachusetts through the efforts of the Commissioner of Health, a voluntary committee on health, interesting itself primarily in questions of health publicity. Child welfare is represented by one of the members of the Advisory Committee on Child Conservation. At the present time the Health Committee is conducting health columns in several of the leading newspapers of the State. The circulation of papers now carrying the health columns is over 250,000 a day. Child welfare receives a considerable amount of publicity by this means. Posters on cancer have been prepared which have attracted a wide interest. It is planned to devise some similar method of educational propaganda on child welfare.

In September, 1918, the original committee dissolved and a new committee with the same personnel was appointed by Dr. Eugene R. Kelley (who succeeded Dr. McLaughlin in April, 1918), as an Advisory Committee to the Division of Hygiene. (Dr. Merrill E. Champion succeeded Dr. Jones in 1918). This change in organization was made because it was felt by everyone that the important thing to be done this year was to make permanent the work started last year. The local committees of the Council of National Defense lapsed like other war activities with the dissolution of the central committee. Child welfare work has been done this year, therefore, through the regular channels of the Department of Health. The budget of the Division of Hygiene has been increased to meet the additional demands made by the increased work.

One of the questions which at the present time is pressing for solution is that of public health work, including child welfare in rural communities, many of which are too small to support a nurse. In several instances towns have united in employing a public health nurse. Transportation has also been provided. This group system is the most obvious method of meeting the situation and is working well in Massachusetts. The plans for future development of public health nursing of this sort are being worked out in co-operation with the Red Cross. This is done by conferences between the Director of the Division of Hygiene, the head of the public health nurses in the employ of the State Department of Health, the District Health Officers and the Director of Nursing of the New England Division of the Red Cross.

Figures tell only a part of the story of the work which the Committee has accomplished. The greatest good has come from the widespread interest aroused in the welfare of children and in public health in general. A few figures may be of interest. There are 131 visiting nursing associations in Massachusetts and a large proportion of them are giving special attention to child welfare as a result of the Committee's work. Forty-three new public health nurses have been employed or authorized as a direct result of the campaign conducted by the Committee. Over $45,000 has been provided by cities and towns for public health nurses, and over $50,000 by private organizations.

In looking forward to the work of the future, it seems to me the things to be done in Massachusetts and in many other states are, first, a better co-ordination of the work of public officials and of local private organizations; second, a further development of public health nursing with especial reference to child welfare in rural communities, and third, constant stimulation by a central committee to keep standards of work high and beyond political control. Child welfare was never so important as at the present time, and no effort is too great to see that efficiency is secured.

"COLON BACILLUS PYONEPHROSIS IN EARLY INFANCY."*

Report of a Case.

By FRANK J. WILLIAMS, M.D.,
ALBANY, N. Y.

It is a well recognized fact that the colon bacillus is a frequent invader of the urinary tract. Its mode of entry is a still unsettled question, the weight of opinion inclining to the belief that it passes through the lymphatic channels from the intestinal tract. Francke has worked out a direct lymphatic communication between the right kidney and adjacent portion of intestine which many accept as a plausible reason for the greater frequency of involvement of the right kidney than the left. Colon bacillus pyelitis is a disease of frequent occurrence in young children, but one that responds well to treatment and that rarely produces fatal results. It is not the purpose of this paper to discuss the well-known features of this common disease. My intention here is to present the report with post-mortem findings of a case of colon bacillus pyonephrosis which has a few very interesting features. The victim was a three weeks' old male infant whose illness terminated fatally after a rapid course.

The patient, Baby S, was the first child of perfectly healthy parents. He was normal at birth, was nursed at the breast, had good digestion and showed no symptoms of any kind during the first two weeks. The cord came off by the tenth day, the navel was healthy and at no time showed evidence of inflammation. The foreskin had been stretched about the tenth day and a couple of days later the mother noticed inflammation at the end of the penis. About the fifteenth day the mother observed that he began to act as if he had pain in the abdomen. He became feverish at times and began to have loose green bowel movements which contained curds. The family physician regarded the symptoms as a digestive disorder for the correction of which he made some small change in the feeding. The symptoms steadily increased in severity and on the eighteenth day he was brought to St. Margaret's Hospital.

It was evident at this time that the baby was seriously ill and was suffering great abdominal pain. The color of the skin was brownish, the nutrition was fair, and the abdomen was greatly distended and tympanitic all over. There was no dullness in the flanks nor other evidence of fluid. A colon irrigation partially relieved the distention, but after a couple of hours it returned. The temperature was 103°; the leucocyte count was 21,000. During the night the baby had three convulsions, the temperature rose to 104°, and the marked abdominal distention recurred at frequent intervals and was relieved to some extent by colon irrigations. Balanitis was present and the inflammation extended within the urethral orifice. No urine was passed for several hours, but the following morning a specimen was obtained for examination. The urine passed was scanty in amount, very cloudy and thick, and highly acid. It contained albumin and a large amount of pus. Treatment with potassium citrate and sodium bicarbonate was given. The distention persisted; the convulsions increased in frequency and severity, and the following night death occurred.

When the post-mortem examination was performed, the body was still well nourished. The onset of the illness had been sudden and the course rapid. The body was not greatly emaciated at death. The skin had a brownish color and the abdomen was markedly distended. Nothing abnormal was found in the chest. The abdominal viscera, with the exception of the kidneys, were negative. Examination of the urinary organs showed an enlarged right kidney, the outer surface of which was dark red in color, mottled with small grayish areas. The capsule stripped easily, revealing diffuse hyperemia over the entire surface of the organ. On section the kidney markings were indistinct, the surface was œdematous and of a dark red color pitted with small gray areas. The pelvis was not dilated and its mucosa showed only slight injection. The left kidney presented an appearance similar to that of the right, but within the substance proper were found two abscesses about 1 cm. in diameter. Smears and cultures from this pus yielded b. coli. No pus was found in the pelvis. The ureters were enlarged and their mucosa slightly injected. The bladder was empty. Its mucosa showed hyperemia about the ureteral openings and slight injection over the other portions. The mucosa of the urethra also showed slight injection and at the external meatus of the penis there was slight ulceration.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 6, 1919.

Among the interesting features of this case, are the age and sex of the infant, also the extent of involvement of the pelvic portions. Crabtree and Cabot have given the following explanation of the sojourn of the colon bacilli through the kidney: "On reaching the kidney the bacilli are arrested in the glomeruli through which they pass readily, without producing damage, into the tubule. Failure to produce glomerular lesions is due to low pathogenicity and lack of pus producing ability of the colon bacillus for the human kidney." The case here reported gives evidence that at least in the kidney of the young infant the colon bacillus is capable of marked and rapid destructive power. Death occurred at the age of three weeks from b. coli septicaemia. The baby had exhibited no symptoms and was apparently perfectly well up to the fourteenth day.

In considering the etiology, which is always difficult to explain in infections of the kidney, it is well to note that the foreskin had been stretched on the tenth day and two days later it was seen to be inflamed. Subsequent examination showed that the mucosa of the entire tract was involved in the inflammatory process. An ascending infection was at first considered as a logical probability, but further study of the facts made this explanation appear less plausible.

Jeffreys reported a series of sixty cases of renal infection by the colon bacillus in children. Six of them were in infants under one year and in three of these cases death occurred, showing a mortality of 50 per cent among the infants in his series. Among the remaining fifty-four cases there were six deaths, a mortality rate of about 11 per cent in the older children. Stuart MacDonald reported two fatal cases of pyelonephritis in male infants of three months and seven months, in which diffuse pyemic foci were found throughout the kidney substance with accumulations of pus in the pelves, which were dilated. He believed the renal involvement resulted from an extension upward from the pelvis. Kovalesky and Moro reported two cases of b. coli pyelitis in new-borns, one being a male who died on the 11th day. Helmholz saw three cases in new-born males.

Conclusions:

It appears that the colon bacillus has high pathogenicity for the kidney substance in young infants, in whom the activities of this organism are less inclined to be limited to the pelvic portion. There is evidence at hand that this infection claims a much higher mortality among the very young than is the case in older children. It is evident, also, from the cases reported in the literature that in early infancy males are frequent victims, and that the generally recognized preponderance of female cases does not obtain in the very young.

ADENOIDS, CHRONIC CONJUNCTIVITIS, PHOTOPHOBIA.*

A Case and a Cure.

By **GEORGE DOW SCOTT, A.B., B.S., M.D.,**
NEW YORK CITY.

It has always been my fond contention that the specialty of pædiatrics automatically includes other specialties in direct relation to it, and that the pædiatrist should have a working knowledge of the eye, nose and throat, and of the ear, and should at least understand how to remove adenoids and tonsils successfully, treat the nasal orifices and perform a paracentesis of the ear drum. In many instances patients directed by us to competent men are shunted off for one reason or another, and either fall into the hands of the incompetent or into the hands of a competent man who does not appreciate fully the co-relationship of other conditions besides the one which he intends to remedy. Fear, fear for that unknown danger which lies in painstaking patient operative technique hurries the timid operator to unfinished and unskilled operative procedures.

Margaret M. was a little six-year-old girl when I first saw her at my office on May 7, 1917. As she walked in she dropped her chin on her chest and slowly and gradually her head turned away from the light of the window in front.

This photophobia or dread of light was extreme and pitiful to see. Her life had been particularly free from illness and disease. At five weeks of age she had had a slight attack of pertussis, and two months previous to May 7th, 1917, she had suffered from an attack of measles, which was by no means severe. However, twelve months before this visit without apparent cause she began to suffer from severe lacrymation, nasal discharge and photophobia. These symptoms became more severe. During this time the child experienced only partial medical relief of perhaps from one to three days at a time, but never a cure. In January, 1917, intense radiating pains in both ears was followed by a profuse discharge from both aural canals, and which continued also with severe headaches and fever. The mother distracted flew hither and thither from one ophthalmologist or autologist to another until one operator, as she supposed, removed the tonsils and adenoids. This, however, was improperly done, and the headaches, aural and nasal discharges, and the photophobia became worse than ever. At least twelve ophthalmologists and aurologists saw the case, the mother tells me, a few refusing to aid, believing no good could be accomplished, the case having gone too far; atropin and argyrol were freely used by others to lessen the pain and to relieve the photophobia, and still other physicians admitted not knowing just what to do.

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* Read at the Annual Meeting of the Medical Society of the State of New York.

The child's confidence gained the lids were with difficulty and with great reluctance separated, for the patient had a clonic exaggeration of a normal twitching of the orbicularis muscles and spastically contracted lids, a so-called blephero-spasm. The conjunctiva was found markedly hyperæmic, abundant secretion existed and the ophthalmoscope showed a peculiar and velvety appearance to it. The cornea appeared to be slightly infiltrated and from its circumference tiny vessels were seen encroaching upon it—no ulcerations were, however, detected. A thin mucoid fluid oozed from between the lids, but no pus was visible. Sharp, radiating head pains tortured. Slight fever was present. The tonsils were found slightly hypertrophied and very hard and firm. There was a slight, watery, grayish discharge from each nostril. The middle and inferior turbinates were found congested and hyperæmic, especially the latter. Argyrol 10 per cent warm was dropped into each eye and a strict simple diet insisted upon. Nuit-Rhei and sodæ ʒij every three hours was also advised. Slight improvement was noticed after the first visit, but later there was a return to the original condition. After a little persuasion the mother allowed me to operate and under ethyl chloride and drop ether, with the Gothstein, the Boeckman and two sizes of the Meyer ring curette, I removed all lymphoid tissue in the oro-pharynx, in the fossa of Rosenmüller and from the epipharynx, possible. I also removed the tonsils. Ten days afterwards the child returned to my office with a slight photophobia but with diminishing catarrhal symptoms. Since that time and up to the present no further symptoms have arisen. An examination of the urine was found to be negative. The patient never sneezed and the discharge from the nose was never extremely profuse.

Adenoids, we are told, are hypertrophied lymph glands normally existing in the epipharyngeal space, attaching themselves to the superior and inferior walls of the epipharynx and distribute themselves even to the fossa of Rosenmüller and to the mouth of the Eustachian tube. Besides, there are innumerable lymphoid hypertrophies over the whole or a part of the surface of the oro-pharynx. Moreover, it must not be forgotten that the lymphoid structures are also found along the lateral folds of the pharyngeal mucous membrane or on the posterior surface of the posterior faucial pillar. These latter are hard to reach by present-day operative methods. A little journey with one's eye and with the aid of an electrical pharyngoscope takes us to the sphenoid bone, our imagination still further to the sphenoid sinus. Now the sphenoid sinus occupies the body of the sphenoid bone being situated directly behind the ethmoid capsule at the posterior and superior portion of the nasal cavities. In the fully developed stage it represents a cavity regular or irregular, large or small. These irregularities, to my mind, quite naturally affect the contour of the surface where adenoids love to hide and operative procedures by way of the oro-pharynx fail often to reach them. And furthermore this lymph tissue hypertrophy may vary in shape and size. It may consist of a soft, diffuse, friable mass of lymphoid tissue, the "blood sponge" of the infant, or else this lymphoid tissue may be lumped up into a more decided central cushion. These two varieties are prone to inflammation, with co-existing fever and purulent discharge.

Now the third variety which we usually see in older children, is the smooth, soft cushion type made up of longitudinal ridges. It is widest and thickest at the end near the roof of the choanæ where it tends to taper and becomes thinner as it sweeps backwards over the vault of the cavity to end in the posterior wall.

The intimate relationship of the sphenoid, post ethmoid cells, together with the lachrymal cavities, is marvelous. The ethmoid cells are separated from the orbit by a thin lamina papyracea which at times has gaps in it.

And besides the anatomical relationship there exists the arterial anastomoses, so important and so vital, as Frederick conclusively points out. For such an anastomosis exists between the nose and the eye by means of the ethmoid arteries, by branches of the ophthalmic and by a collateral trunk along the lachrymo-nasal duct which joins the angular, the ophthalmic and a branch of the infra-orbital artery. Likewise in the same parts do the veins and lymphatics follow along. The lymphatic communication between these cavities is an important factor in subsequent bacterial invasions.

The bacteriological findings in these cases is, to say the least, uncertain. Investigators have presumably found in these conjunctival secretions the strepto-, staphylo- and the pneumococcus of Fraenckel. On the other hand, Magitot mentions from observations made in the trenches that out of 100 cases of kerato-conjunctivitis nasal lesions were found in 95 cases, and what is still surprising bacteriologically the conjunctival secretions were mostly negative.

Now the kerato-conjunctivitis of my little patient may have been at least partially due to bacteria originating in the epipharynx (in my experience diseased adenoids are rare), or from an ectogenous infection. Germs from without through the agency of flies, lice, bedbugs and other pests, or from droplets ejected through coughing or sneezing, and also from catarrhal conditions of the nose and naso-pharynx, caused by adenoids, as Everbusch points out, or indirectly through the transition of acute, subacute or chronic intermittent affection of the lids and lachrymal sac, the originating cause being adenoids, of course. And furthermore, what is most likely, adenoids causing a more or less serious impairment to the general health with a daily rise in temperature of some degree or another, induce diminution of the lachrymal secretion, and this dryness, as well as the reduced pupillary movements, increases the sensitive conjunctiva to outside influences such as bacterial infection, and the younger the patient the more active the course.

In many—in most cases, perhaps catarrhal, nasal conditions do not end in eye infections, consequently there must be in such cases not only infection from without but from something within. Adenoids, then, are in the young often the predisposing cause of that train of symptoms and conditions ending in conjunctivitis and photophobia, as well as many other conditions and we pædiatricians should understand more about them. The cornea, strange to say, is rarely affected directly by disease of the nasal cavities.

Now there is nothing new under the sun—my inadequate paper verifies this old saying. I am not, strictly speaking, an ophthalmologist, an otologist, or a pharyngologist, nor do I desire to place my reluctant head upon the chopping block of any one of them. The moral of the paper if there is any is, that experience, thoroughness and belief in one's self can often surmount obstinate difficulties.

Discussion.

Dr. J. J. O'Brien, Schenectady: Dr. Scott's interesting paper, and the no less valuable discussion by my excellent friend and neighbor, Dr. Theisen, opens up for review and discussion a subject of the first importance. The experience of Dr. Scott's six-year-old patient must, indeed, be unique, for were it otherwise we, from the rural districts, would feel an irresistible, all-compelling call to get together and give to our colleagues of New York City a course of instructive training in up-to-date methods in otology and ophthalmology. But those of us who are more or less regular visitors to the Metropolitan clinics know that Dr. Scott's experience in the case reported cannot be a common occurrence. We always bring something of real use away from every visit to the New York Hospitals and regret that we could not browse in the rich pastures for a day every week in the year.

The type of case under discussion is common enough to be familiar to most active practitioners. It is easy, however, to miss the significance of recurring attacks of conjunctivitis and keratitis in relation to their causation; and equally easy to form hasty deductions from a small number of cases. It is certainly not within my experience to see inflammatory reactions in the eye that are indubitably due to adenoids. But this, like most things, is possible. Adenoid tissue in young children is seldom pathologic, so whatever damage it does to either eye or ear is altogether mechanical by obstructing naso-pharyngeal drainage. The same is true of hypertrophied tonsils. And it is because of this obstruction that the early removal of these structures is almost always advisable.

In all eye inflammations of sudden onset it is wise to look for foreign bodies on the surface of the eyelids and globe, especially the cornea, because they are the most common cause of these inflammations. Then the cornea should be carefully searched for abrasions and ulcers, especially should the depth of the latter be noted, for the superficial ones do little permanent damage while the deep always do. Their location, too, is important, for the further an ulcer is from limbus the poorer its blood supply and the greater the danger of corneal perforation. Then, too, the vision of an eye will not be impaired in the least by an opacity following a corneal ulcer if not in the papillary area, while a minute one in the center of the cornea may so impair the vision as to make the eye a very defective organ, indeed. If blood vessels invade the cornea they should be observed, whether they are deep or superficial, for here again the deep ones indicate the greater harm. It is always wise to note the size of the pupil as compared with the fellow one, also its color, whether it reacts quickly, sluggishly or not at all. The proper interpretation of these will inform one whether there is present iritis.

Pain in the brow at night over the affected eye nearly always indicates the latter. These suggestions will direct the pædiatrician to determine what he is dealing with and whether the help of an oculist is needed. So here again many factors make up the symptom complex upon which the diagnosis and prognosis must be based if we are to do all that is incumbent upon us in these eye lesions.

The next in order is the nose and throat. Had this been done in this case the causative factor would have been detected early and removed with a happy ending. Dr. Scott, by an oversight, hasn't told us of the result of the pathologists' examination of the tonsils. The doctor's paper is valuable in directing our attention to the importance of prompt cure in the eye inflammations of children. And if permitted, a word or two in reference to the very common phlyctenulae of the cornea and conjunctivæ so prevalent among children to pædiatricians may not be out of place especially with reference to treatment. But a few years ago these were among the cases that didn't add to the joy of the oculist. The condition was hardly cured when it recurred either in the same or fellow eye to the great discouragement of the parent and disgust of the doctor. You are all familiar with these little sufferers and can give prompt and positive relief by the exhibition of tuberculin in addition to the usual local treatment. The dosage must necessarily be minute, so the following is suggested, having proved safe and efficient: add one drop of O. T. to an ounce of normal salt solution. Put eight drops of this in half an ounce of normal salt solution. (The solution should be made fresh monthly.) Begin by injecting three minims, increasing by one minim at each injection. The latter should be repeated every fifth or sixth day. Usually three or four treatments produce a cure and what is, indeed, gratifying is that there is seldom a recurrence. These cases when neglected result in corneal opacities more often than any other type, the pædiatrist sees them early and the treatment above outlined is well within his sphere, takes little time for its administration and will richly repay his efforts.

BLOOD TRANSFUSION.*

By W. WARREN BRITT, M.D.,
TONAWANDA, N. Y.

SINCE the transfusion of blood has become such a well known procedure, it has added a valuable adjunct to our Armamentarium.

While the circulation of the blood was established by William Harvey and given to the world in 1628, it was about two hundred years later before transfusion became an established procedure.

Rapid advances were made during the nineteenth century, but owing to the lack of knowledge of agglutination and hemolysis, transfusion suffered periods of disuse.

In the beginning of the twentieth century great strides in blood vessel surgery and the discovery of the established principles of agglutination removed the two great drawbacks to the operation of transfusion, viz., the clotting of blood during the operation and the hemolysis afterward.

Following this great work a new impetus was given to blood transfusion, clearly establishing its enormous therapeutic value. But the use of these methods was accompanied by the loss to the donor of either an artery or a vein and also considerable risk at each donation, besides the inability to measure the amount transfused.

In 1913 Lindeman perfected the syringe and canula method, which in the hands of an especially trained operator and a corps of assistants, is an excellent method.

In 1915 the sodium citrate method was given to us, which seems to have overcome the difficulties of all other methods and is safe, rapid and accurate.

The therapeutic value of the blood is the same whether transferred by the direct method of blood vessel to blood vessel as perfected by Crile, or the syringe method of Lindeman, or by the use of an anti-coagulant, as sodium citrate, which method was described independently by Weil and Lewishon in 1915.

The particular method is not so important as to learn to do accurately and quickly some method.

Careful selection of the donor and indications for transfusion are most important.

The necessity of having trained assistants has in the past deterred many from employing this valuable therapeutic procedure.

Cases requiring transfusion may be classed in two sub-divisions:

I. Cases requiring haste owing to the precarious condition of the patient:

1. Traumatic.
2. Post-partum hemorrhage.
3. Ruptured Ectopic Pregnancy.
4. Typhoid fever.
5. Post-operative hemorrhage.
6. Post-operative shock.
7. Hemophilia.

II. Cases which may be done in a leisurely manner:

1. Pernicious anemia.
2. Infectious Diseases: (a) Pneumonia, (b) Rheumatism, (c) Empyema, (d) Influenza.
3. Preliminary to operation.

The mention of these cases will undoubtedly call to your mind occasions, where if you had had a simple method of transfusion at hand, you would have been able to give your patient one more chance of recovery.

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*Read at the Annual Meeting of the Eighth District Branch of the Medical Society of the State of New York, at Buffalo, September 3, 1919.

My first experience in doing transfusion was with the Lindeman method; later I adopted the Lewishon citrate method, which I have used with splendid success, and it is the method of choice where 500 cc. or more are to be given.

The method I wish to describe is the method I use most frequently. It is a one-man method and is equally applicable at the bedside or in the office.

The apparatus I use consists of two 100 cc. syringes, two 50 cc. Leur syringes, one hypodermic syringe, one short rubber connection, two needles 18-gauge, two needles 20-gauge, ordinary Leur needles about 1½ inch long, one 50 cc. glass stoppered bottle, one rubber tourniquet, one jar sterile albolene. I have my sodium citrate prepared in one-gram packages; adding the contents of one package to 50 cc. of freshly boiled distilled water gives me a 2 per cent solution of sodium citrate. Draw 10 cc. of the citrate solution into the 100 cc. syringe which has been previously coated inside with a thin film of albolene. Prepare the donor's arm, apply the tourniquet, not sufficiently tight to shut off the radial artery, insert the needle into the most prominent vein at the elbow, attach the syringe and withdraw 100 cc. of blood. Remove the syringe and by inverting it two or three times, thoroughly mix the blood and citrate solution. The second syringe may be filled in the same manner.

We are now ready for the recipient, whose arm is prepared, and the tourniquet applied. A fresh needle attached to the hypodermic syringe is now inserted and the intravenous pressure will cause the blood to flow into the hypodermic syringe clearly showing that your needle is well within the vein. Have patient relax his hand and remove the tourniquet and hypodermic syringe and apply the syringe of blood, withdraw the plunger a trifle to make sure there is no air in the connection and then inject the contents of the syringe, repeating with the second syringe.

Since employing this method I have found that the injection of 50 to 200 cc. of blood at intervals of six days is much more desirable than the larger amounts at longer intervals. It appears that the stimulating effect of the small amount of blood on the blood making laboratory of the patient produces an increased number of red cells out of all proportion to the number of cells injected. This is seen in the rise of hemoglobin and blood picture which occurs in a few days.

When we realize that blood as a whole contains all the anabolic substances destined to nourish and renew the tissues and all katabolic substances, we see at once its great power of transferring this potential energy from one person to another.

I think the future has in store for us some revelations along this line as we learn more of biologic chemistry.

The selection of a donor is important and it consists in finding a person whose blood cells are not agglutinated by the plasma of the patient.

This is determined by the method of Moss as modified by Minet. It consists in withdrawing 1 cc. of blood from patient and placing it in a small test tube about 20 mm. in diameter and 2 or 3 drops of blood in about 1 cc. of 2 per cent solution of sodium citrate in a second test tube. This procedure is repeated with the blood of the donor. At the expiration of 5 or 10 minutes the blood has clotted, take one drop of the clear serum of the patient on a slide and adding one drop of the mixture of cells and sodium citrate from the donor, cover with a cover slip and examining under low power of a microsope, if a clumping of the cells occurs it means that that individual's blood is not safe. Hemolysis is sure to occur. Moss was one of the first to observe that hemolysis is always preceded by agglutination. This agglutination may also be demonstrated macroscopically without necessity of a microscope by using slightly larger amounts of each specimen and allowing it to stand for a longer period. In that class of cases where haste is not so important and you have time to properly group your patient and donors it is well to do so.

All human beings may be grouped into four groups. Since group IV. contains about 43 per cent of all persons, and the blood of this group is suitable for transfusion with the blood of all the groups, I have available a number of young, robust, healthy individuals of this group for emergency work. It is surprising how readily a large number of people are willing to co-operate with you. I have one man who has acted as donor 16 times and states that he has felt no ill effects.

My experience with the infectious diseases has been interesting. Two cases of empyema following the "Flu" from which 500 cc. of pus was drained from the first patient and 1,200 cc. from the second patient. Through the drainage tube daily irrigations of Dakin's solution were given until all drainage ceased—these patients were both in an extremely anemic and weakened condition—one transfusion of 250 cc. of blood each gave a noticeable impetus to their convalescence which went on uninterruptedly.

In several cases of anemia I have given 50 cc. of blood at intervals of six days with a progressive increase in the blood picture and general improvement in the patient's condition. In four cases of pernicious anemia I have had about the same results that others with more extensive experience have had. In 3 of the four cases treated remission of the disease occurred after several transfusions, but only one of the four cases is still living.

In two cases of ruptured ectopic pregnancy, one transfusion of 200 cc. after operation was sufficient to hasten a satisfactory convalescence.

Two cases of miscarriage were in a desperately critical condition from loss of blood when first seen by their attending physicians, one was given 300 cc. the other 200 cc.; both made a satisfactory recovery.

My attention was called to the small amount of blood in transfusion by Bernheim in his book on "Blood Transfusion," and I cite these cases which have convinced me that there is virtue in the small doses repeated at short intervals.

Correspondence

DEPARTMENT OF HEALTH

ALBANY, N. Y., September 24, 1919.

Dr. Floyd M. Crandall, Assistant Editor,
NEW YORK STATE JOURNAL OF MEDICINE.

DEAR DOCTOR: The Sanitary Code requires that all cases of pneumonia shall be reported to the local health authorities as soon as diagnosis can be made. In the reports lobar and bronchial pneumonia should be differentiated. Recent reports of deaths indicate that this disease has not been well reported during the last few months. The report indicates that many deaths are recorded where no cases have been reported.

The physician is entitled to compensation for reporting each case of pneumonia even though it has been previously reported as a case of influenza.

Hoping for your continued assistance and co-operation in this matter, I remain,

Very truly yours,
HERMANN M. BIGGS,
State Commissioner of Health.

STATE DEPARTMENT OF HEALTH

ALBANY, N. Y.

Dr. Floyd M. Crandall, Assistant Editor,
NEW YORK STATE JOURNAL OF MEDICINE.

DEAR DOCTOR: We have just received the following letter in regard to the need of a physician in East Durham, N. Y.

"EAST DURHAM, N. Y., September 8, 1919.

"State Department of Health, Albany, N. Y.

"GENTLEMEN: We are in need of a doctor. Will you please see if you can secure a doctor for us at once. There is a large field and plenty to do. This field takes in several villages, including East Durham, Freehold, Durham, Cornwallville, Oak Hill, Medusa, and Sunside. The doctor that was located here is moving away next week, the work here being too hard for him. Send me a list of men who would like this field and I will take the matter up with them, show them around, etc. Please advise at once. (Signed) H. W. TUBBS."

Yours very truly,
B. R. RICHARDS,
Assistant Deputy Commissioner.

Medical Society of the State of New York

Section on Eye, Ear, Nose and Throat

The program for the Eye, Ear, Nose and Throat Section has practically been completed. If any member wishes to present a paper, please communicate immediately with the Chairman, Dr. A. J. Bedell, 344 State St., Albany, or the Secretary, Dr. I. M. Voorhees, 18 Central Park West, New York City.

Eighth District Branch

FOURTEENTH ANNUAL MEETING, BUFFALO, WEDNESDAY, SEPTEMBER 3, 1919.

The 14th Annual Meeting of the Eighth District Branch of the Medical Society of the State of New York, was held at Perkins Hall, Y.M.C.A. Building, Buffalo.

The meeting was called to order by the President, Dr. Lytle.

The Minutes of the meeting of the Executive Committee of the Branch held on March 8, 1919, were read and approved.

The Minutes of the previous Annual Meeting held September 3, 1918, were read and approved.

The following officers were elected for two years: President—Harry M. Trick, M.D., Buffalo; Vice-President—Edward Torrey, M.D., Olean; Second Vice-President—William R. Thomson, M.D., Warsaw; Secretary—W. Warren Britt, M.D., Tonawanda; Treasurer— Fitch H. Van Orsdale, M.D., Belmont.

The Hon. Augustus S. Downing, Assistant Commissioner of Education, Albany, gave an interesting and very able presentation of the subject of the Annual Registration of Physicians.

W. Warren Britt, M.D., Tonawanda, presented a paper on "Blood Transfusion." Discussion followed by Drs. DeLancey, Rochester, Buffalo; George W. Kosmak, New York, and Charles Cary, Buffalo.

The meeting then adjourned for lunch. The afternoon session, which was held in the Star Theatre, was given over to a symposium on Compulsory Health Insurance. There was a large attendance at the meeting, the lower floor of the theater being filled with physicians and representatives from social welfare and labor organizations, who listened to the following interesting program:

"Address by the President," Albert T. Lytle, M.D., Buffalo.

"Symposium on Compulsory Health Insurance," James F. Rooney, M.D., Albany; Mr. Henry T. Noyes, Rochester, and Honorable Frederick M. Davenport, Senator, State of New York.

The questionnaire which followed the discussion lasted until the meeting adjourned.

County Societies

THE MEDICAL SOCIETY OF THE COUNTY OF ROCKLAND.

THIELLS, N. Y., Wednesday, September 24, 1919.

The quarterly meeting of the Society convened at Letchworth Village. The business session was devoted entirely to the discussion of Compulsory Health Insurance, and to the consideration of communications from several of the County Medical Societies of the State who are organizing to oppose the bill if introduced into the Legislature.

Dr. George A. Leitner moved that the Secretary be instructed to write the candidates for assembly of this County to ascertain their intentions and attitude respecting Compulsory Health Insurance, and when their replies are received to report to a Special Meeting to be called at the County Court House on the last

Thursday in October. Motion was unanimously carried.

Drs. Ralph Oakley Clock, bacteriologist of the Lederle Laboratories, and Robert Boyd, of the New York State Hospital for Crippled and Deformed Children, were elected to membership.

No reports of committees were received.

A motion picture supplied by the State Department of Health on "The Early Diagnosis of Tuberculosis" was demonstrated.

Charles S. Little, M.D., Superintendent of Letchworth, was a most generous host, taking the visiting members through many of the well appointed buildings —school rooms, work rooms, dormitories, etc.

A very good exhibition of setting up exercises was given by a class of defectives, led by the physical directress.

After which a most bountiful collation was served to the attending members.

Dr. Little invited the Society to meet at Letchworth annually in September, and said that he would supply the Clinics for next year.

A vote accepting this invitation and one of thanks was tendered to Dr. Little and his staff.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

Rational Therapy. By Otto Lerch, A.M., Ph.D., M.D., Professor of Medical Diagnosis and Treatment, Tulane University of Louisiana, Post Graduate Department. Southworth Company, Troy, 1919.

Tuberculin and Vaccine in Tubercular Affections. A practical guide for the Utilization of the Immune Response in General Practice. By Ellis Bonime, M.D., Adjunct Professor Surgery and Division of Immunotherapy, N. Y. Polyclinic Medical School and Hospital. Southworth Company, Troy, 1917.

Menders of the Maimed. The Anatomical and Physiological Principles Underlying the Treatment of Injuries to Muscles, Nerves, Bones and Joints. By Arthur Keith, M.D. (Abdn.), F.R.C.S. (Eng.), LL.D. (Abdn.), F.R.S., Conservator of the Museum and Hunterlian Professor Royal College Surgeons, England. Oxford University Publications, New York City, 1919. Price, $6.50.

Sterility in Women. By Arthur E. Giles, M.D., B.Sc. (Lond.), M.B., Ch.B. (Vict.), F.R.C.S. (Edin.), M.R.C.P. (Lond.), Captain R.A.M.C. (Temp.), Senior Surgeon to the Chelsea Hospital for Women, Gynæcologist to the Prince of Wales's General Hospital, Tottenham. With Eleven Illustrations. Oxford University Publications, New York City, 1919. Price, $4.00.

Venereal Diseases. A Practical Handbook for Students. By C. H. Browning, M.D., D.P.H. Director Bland-Sutton Institute of Pathology, Middlesex Hospital, and David Watson, M.D., C.M. Lecturer of Venereal Diseases, Glasgow University; Surgeon in Charge Venereal Department, Glasgow Royal Infirmary and Lock Hospital, Glasgow. Introduction by Sir John Bland-Sutton, F.R.C.S. Oxford University Press, 1919. Price, $6.50.

Plastic Surgery. Its Principles and Practice. By John Staige Davis, Ph.B., M.D., F.A.C.S. With 864 Illustrations containing 1,637 figures. Published in 1919 by P. Blakiston's Son & Co., Philadelphia. Price, $10.00 net.

The Medical Clinics of North America. Chicago Number. July, 1919. Volume 3, Number 1. Published Bi-monthly by W. B. Saunders Co., Philadelphia.

Book Reviews

A Text-Book of Urology in Men, Women and Children, including Urinary and Sexual Infections, Urethroscopy and Cystoscopy. By Victor Cox Pedersen, A.M., M.D., F.A.C.S. Octavo of 991 pages, illustrated with 362 engravings, of which 152 are original and 13 colored plates. Philadelphia and New York: Lea & Febiger, 1919. Cloth, $7.00.

This single volume contains 964 pages of text and represents the hard labors of a urologist of wide clinical experience. Much space has been devoted to the acute and chronic forms of specific and non-specific urethritis and their complications. Chapters on gonococcal infections in the female with all their complications are also included.

The text is systematically arranged and tabulated and is admirably well written in detail.

The author expresses his firm belief in the so-called physical methods of treatment (hydrotherapy, heliotherapy and electrotherapy). He anticipates their being more widely used in the future and quotes freely from literature to support his views. The galvanic, faradic and high-frequency currents are each assigned to their field of usefulness with specified dosage. In high-frequency, the Oudin and D'Arsonval are both employed, but the latter has the widest field of usefulness. One who has not had sufficient experience in the application of these methods is not in a position to belittle their value.

He has also given special attention to the important subject of after-treatment.

In preference to the author's method of short-catheter urethral irrigation, the reviewer believes that the Wheeler rubber nozzle attached to any suitable form of irrigating syringe is easier and simpler. The metal-glass Record bladder syringe (Kny-Scheerer) or the Alexander-Janet type work more smoothly than others.

Under Radiographic Diagnosis 26 possible causes of shadow other than renal calculus are listed. Readers would do well to bear these always in mind. Dr. Pedersen aptly recommends the use of the shadow catheter for diagnosis in all cases. This can be done at the one cystoscopic session for complete tests.

The colored plates on urinary sediments taken from Ultzmann are excellent. The author has also given the essential differentiation of the epithelia.

One is impressed with the clearness of the author's illustrations of diagnostic and therapeutic procedures throughout the book.

For exploration of the ureter with the wax-tipped catheter the author employs the Brown-Buerger instrument with specially constructed obturator.

The subject of syphilis is not included in this work.

Under the consideration of renal function complete data on the latest blood chemistry are given.

If a chapter on impotence, sterility and the functional disorders of sex were also added to this book it would not be amiss.

Dr. Pedersen's work will prove most useful and valuable to student, practitioner and specialist alike.

Augustus Harris.

Today's World Problem in Disease Prevention. A Non-Technical Discussion of Syphilis and Gonorrhea. By John H. Stokes, A.B., M.D. 136 pages. Octavo: Washington, U. S. Public Health Service, 1919.

This pamphlet is issued by the United States Public Health Service, and was primarily intended for the instruction of soldiers and sailors of the U. S. Army and Navy.

As the sub-title implies, the work is a non-technical discussion of syphilis and gonorrhea; it is written in such a simple manner that any one of the laity can understand the subjects in their fullest details.

The space allowed for the review of so small a book is too limited to give as comprehensive a review as the book deserves, but in order to give an idea of its scope the captions of the chapters will be given, viz.: The nature of the genital infections. The source of the genital infections. The genital sore. History, cause and prevention of gonorrhea. Symptoms, tests, for infectiousness of gonorrhea in men and women. The treatment, hygiene and cure of gonorrhea. Gonorrhea and marriage. History, cause and prevalence of syphilis. The course of syphilis. The treatment of syphilis. The cure, personal and public hygiene of syphilis. Syphilis and marriage. The social, psychologic and economic background of syphilis and gonorrhea. The public viewpoint. Normal ideals of the sex life. Abnormal checks on marriage. The trend of the times to laxity. Alcoholism and the genital infections. Moral and educational prophylaxis of syphilis and gonorrhea. Problems and methods of sex education. The public health control and personal prophylaxis of syphilis and gonorrhea.

It seems almost incredible that any one could include in such a small book all of the points of this very important subject, and no one could have done it but Dr. Stokes.

This work is not intended for the medical profession, but it could be read by all medical men with a great deal of profit and the profession should endeavor to place a copy in the hands of their adult patients.

J. M. W.

The Medical Clinics of North America, May, 1919, Baltimore Number. Published Bi-monthly by W. B. Saunders Company.

This issue, the Baltimore number, maintains the standard of the previous numbers of this series. The clinical method of presenting the topics under consideration make these papers more easily read and understood than the more formal presentations. The more informal and personal discussion of the facts of the cases holds the interest and permits of the greatest amount of personal, practical experience being presented as well as theoretical knowledge.

All of the subjects are of interest, and are carefully discussed. Of especial merit in the reviewer's opinion are the articles by Hamman, on Auricular Fibrillation and Introductory Remarks to a Discussion of Diabetes; by Krause, on A Case of Multiple Tuberculosis in Childhood; by Clough, on Pneumococcus Sepsis. The articles by Friedenwald on Personal Experience in the Treatment of Ulcer of the Stomach, and by Gaither on The Rôle of Diet in Treatment of Digestive Diseases, are most carefully presented in detail. This issue, as the preceding ones, should be carefully studied by all who are interested in medicine.

Henry M. Moses.

Trench Fever. A Louse-Borne Disease. By Major W. Byam, R.A.M.C., Captains J. H. Carroll, U.S.R., J. H. Churchill, R.A.M.C. (T.), Lyn Dimond, R.A.M.C., V. E. Sorapure, R.A.M.C., R. M. Wilson, R.A.M.C. and L. L. Lloyd, R.A.M.C. (T.), Entomologist. With an Introduction by Lieut.-General Sir T. H. Goodwin, K.C.B. A Foreword by Major-General Sir David Bruce, K.C.B., F.R.S., A.M.S., and a Summary of the Report of the American Trench Fever Commission by Lieut. R. H. Vercoe, R.A.M.C. Oxford University Press, New York and London, 1919.

This book presents a carefully prepared record of the experiments of the author and his co-workers of the British War Office Trench Fever Investigation Committee upon patients and volunteers at the hospital at Hampstead. The patients have been carefully studied, the disease has been transmitted to healthy volunteers and various experiments have been performed to determine, if possible, the cause of trench fever, its mode of transmission, and the means of its prevention.

The conclusions arrived at show the importance of personal cleanliness, and the absolute necessity during the demobilization of troops of thoroughness in delousing them. This disease is not merely a disease of troops, it is a louse-borne one and unless thorough precautions are taken during demobilization, the author believes that this malady will continue to exist in Great Britain wherever conditions of crowding, poverty, and filth exist.

The author finds that "the excreta of lice fed on trench fever patients were capable when applied to an abraded skin area, of producing a febrile illness similar in its relapsing character and general clinical picture to the disease at present known as trench fever." That "the incubation period is seven to nine days increasing to sixteen days as the infecting dose is reduced." The symptoms are, fever of five or six days' duration, myalgia and a tendency to recurrence. The continued cases present myalgia, disordered action of the heart and so-called neurasthenia. The sequelae are but a continuance of the disease and evidence of a persistence of the infection. In the Foreword, Major-Gen. Sir David Bruce states "trench fever is never fatal, or at least, no fatal case has up to the present time been recorded." Little has been discovered concerning the pathology of this disease. The treatment is still to a great extent in an experimental stage and is determined by the condition of the patient.

The necessity of destroying lice is the lesson taught by this investigation and the author gives in detail a carefully prepared life history of the louse and the methods of its destruction.

In the appendix we have a detailed report of the experiments and they show the care and thoroughness of the author.

We have also a summary of the report of the commission of the American Red Cross Research Committee on Trench Fever which adds to the value of the book. For one interested in the diseases peculiar to the recent war, and to anyone interested in medical conditions, this book is a valuable one for reference. Prophylaxis against lice is the lesson of the book. Typographically the publication is excellent, clear type, fine paper, plain charts easily understood.

Henry M. Moses.

Rules for Recovery from Pulmonary Tuberculosis; A Layman's Handbook of Treatment. By Lawrason Brown, M.D. Third Edition, thoroughly revised. 12mo. of 192 pages. Philadelphia and New York: Lea & Febiger, 1919. Cloth, $1.50.

This book represents the experience of the author in the treatment of many patients with pulmonary tuberculosis. All that a patient should know about the disease and about himself is excellently presented and can be readily understood. The questions which naturally arise in the mind of a patient are answered here, and the reasons given for many of the procedures followed or advised are clearly expressed. Every person with tuberculosis, and the members of a family in which tuberculosis exists, should read this work carefully. No detail of treatment which the patient should know has been omitted. This book should be studied by every physician who attends patients who may suffer from tuberculosis. The advice given cannot be improved upon either in substance or form. The publishers have used the finest paper and large print and have issued a book up to the usual high standard of the house.

Henry M. Moses.

The Refraction of the Eye. A Manual for Students. By Gustavus Hartridge, F.R.C.S. With 110 illustrations. 16th edition. Published in 1919 by P. Blakiston's Son & Co., Philadelphia. Price, $2.25 net.

Hartridge on Refraction has earned the well deserved honor of being one of the best sellers of its class. The first edition appeared in 1884. Revised editions were brought out at intervals of two or three years. In all, upwards of 36,000 copies have been sold. This excellent treatise has now reached its sixteenth edition, thoroughly revised and up to date. Hartridge on Refraction does not assume to take the place of the more voluminous works on the subject. However, this manual is admirably adapted as a text-book for students. Refraction is one of the exact sciences and hence it is important that the novice should have before him clear, concise and definite statements of scientific facts.

This treatise will continue to be a source of instruction for the younger members of the profession and also a very valuable mentor to those who are already in active practise.

James W. Ingalls.

The Realities of Modern Science. By John Mills. An Introduction for the General Reader. Macmillan Company, New York. 1919. Price, $2.50.

The author states in his preface that this book "is intended for the general reader, interested in modern science, who finds few clews to recent advances in his memories of the formal instruction of school or college days." During the past two decades the results of physical research have so modified the accepted ideas of the ultimate constitution of matter and electricity that those who have been out of school a few years must readjust their ideas of atoms, molecules, electricity, chemical action, etc.

The transmutation of the elements, as believed by the alchemists, is now a demonstrated fact, in some cases at least. The indivisable nature of the atom can no longer be claimed, nor is the atom the ultimate unit of matter. The electronic theory of atoms and electrical excitement and transmission affords a new explanation of the constitution of matter and electrical phenomena. A considerable number of books have been published within the last few years attempting to popularize these new facts of science, of which this is an example. The author presents this volume as an introduction to the physical sciences. He believes that the division of the subject into chemistry, physical chemistry and physics is unnecessary, and that these subjects should be treated as a unit. It is with this notion in mind he presents this introduction. That the author has succeeded in simplifying the study of these sciences is a matter of doubt. It is certainly not a book for the beginner.

The first two chapters present in simple language and in historical order the chief discoveries in the development of physics and chemistry. He then takes up the discussion of rates, force, molecular motions, movements of electrons, interaction of moving electrons, the continuity and correspondence of molecular states, molecular mixtures, electrolytic dissociation, magnitudes, molecular energy and electronic magnitudes. From this list of subjects it will be seen that a fairly good previous introduction to these sciences is necessary to follow this "introduction."

For the student who has studied these sciences and has a knowledge of the terms usually employed in them, this volume is of especial interest. For those who wish to review recent advances in the teachings of modern science this book is to be recommended.

E. H. B.

Mortality Statistics of Insured Wage Earners and Their Families. By Louis I. Dublin, Ph.D. Statistician of the Metropolitan Life Insurance Co. Octavo of 397 pages. New York, Metropolitan Life Insurance Company, 1919.

This exceedingly interesting 400 page volume gives the experience of the Metropolitan Life Insurance Company, Industrial Department, in the United States and Canada, for the period from 1911 to 1916. Some of the facts analyzed in this volume have been published before in the various reports issued by the Metropolitan Life Insurance Company. The present volume is, however, more than a compilation and is in fact a comprehensive treatment of the entire field of mortality as related to wage earners and their families. "Mortality Statistics" ought to be of interest not only to statisticians but also to the medical profession as it suggests new lines of medical facts and research.

The results of the studies of the mortality of the industrial members of the Insurance Company do not greatly differ from results gained by the U. S. Census. For instance, the volume gives proof that, considering all ages of the mortality experience of males, the colored race shows a mortality rate of fifty per cent higher than that of the white race, while the mortality of colored females was very nearly two-thirds in excess of the mortality among white females. In both sexes the ratio of excess varies with the age period.

Of interest is the downward trend of mortality of insured wage earners from 1911 to 1916. In the six years from 1911 to 1916 inclusive, the death rate fell from 12.53 to 11.68 per thousand exposed, a decline of 6.8 per cent. The amount of decline is still more marked if the white lives themselves are considered.

It is impossible in a short review to cite the many interesting and important conclusions reached by the compilers of the data by the Insurance Company. The mortality from tuberculosis, pneumonia and various other causes shows some very interesting variations and is worthy of full study by those who are interested in general and special mortality statistics.

G. M. P.

Deaths

Matthew L. Bennett, M.D., Watkins, died August 5, 1919.

Henry A. Dodin, M.D., New York City, died September 29, 1919.

John M. Garratt, M.D., Buffalo, died September 6, 1919.

David Gootenberg, M.D., Stapleton, died September 16, 1919.

Ambrose Kasson, M.D., Bath, died September 1, 1919.

Joseph A. Kenefick, M.D., New York City, died September 19, 1919.

Charles Campbell Kimball, M.D., Watertown, died August 16, 1919.

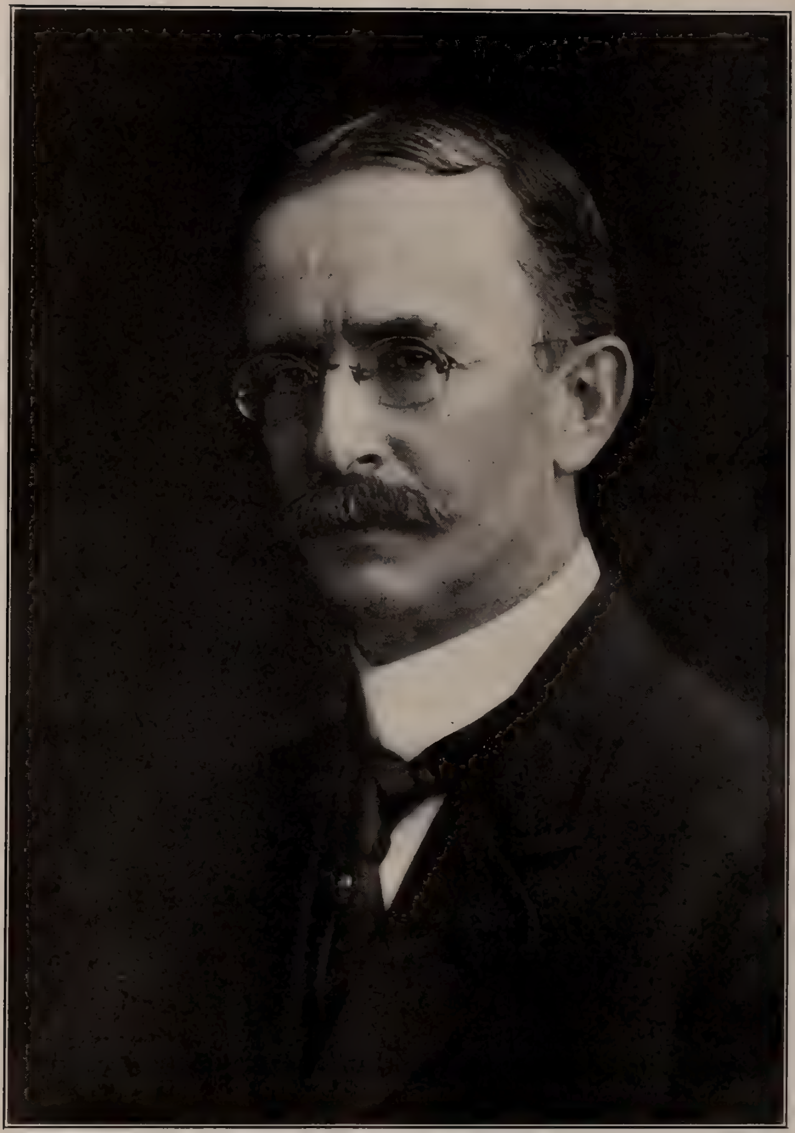
Frederick W. Koehler, M.D., Buffalo, died July 18, 1919.

Charles Frederick Myers, M.D., Albany, died July 30, 1919.

John A. Pettit, M.D., Buffalo, died August 6, 1919.

Fletcher Alberto Smith, M.D., Corinth, died June 27, 1919.

Theodore S. Thomas, M.D., Cuba, died September 1, 1919.



FLOYD MILFORD CRANDALL

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Vol. XIX. NOVEMBER, 1919 No. 11

EDITORIAL DEPARTMENT

FLOYD MILFORD CRANDALL was born in Belfast, New York, on May 2, 1858, the son of Charles Milford Crandall, M.D., a physician of prominence in Western New York, and Deborah J. Wood Crandall, who came of a family that emigrated to Massachusetts in the latter part of the 17th century. The first Crandall to come to this country was the Reverend John, who arrived in Boston in 1634, and, with two companions, followed Roger Williams into the wilderness in quest of religious freedom.

Dr. Crandall obtained his early education at the Genesee Valley Seminary. In 1879 after graduating from the Geneseo Normal School, he became its principal and held that position for two years, resigning to come to New York to take up the study of medicine. He then entered the University Medical College of New York, from which, in 1884, he received the degree of M.D. with honors. He was unanimously elected secretary of the class. Being second prize man, he was appointed to the staff of Bellevue Hospital and in the following year became House Physician.

Upon leaving the hospital, he entered upon private practice in New York in 1886. He was soon appointed a Clinical Assistant in the New York University Medical College, Attending Physician to the Out-Patient Department of Bellevue Hospital, and a year later, Attending Physician to the Northwestern Dispensary. He has since been Visiting Surgeon to the Skin and Cancer Hospital, Visiting Physician to the Minturn Hospital, to the Infants' Hospital, and to the Children's Hospital, and Consulting Physician to the New York City Children's Hospitals and Schools.

In addition to his private practice and hospital appointments, he has always been active in teaching, in writing, and in medical society work. He taught for many years in the New York Polyclinic Medical School, passing through the various grades of instructor, lecturer and Adjunct Professor. Early in his career he began to contribute to the medical magazines, a practice which he continued to the last days of his life. He was a voluminous writer and the author of over sixty monographs and papers. His most important work was a volume on "Preventive Medicine." In the late eighties he was appointed on the staff of the *New York Medical Journal,* and shortly after became managing editor of the *Gaillard Medical Journal.* In 1895 he was made editor of the *Archives of Pediatrics,* the only magazine in the English language devoted to the diseases of children. He held this important position for six years and resigned owing to the pressure of a rapidly growing practice. He is the author of articles in Foster's Cyclopedia of Therapeutics, Hare's System of Therapeutics, Starr's Text-Book of Pediatrics, Carr's Practical Pediatrics, Sajous' Cyclopedia of Medicine, and Keating's Cyclopedia. For ten years he has contributed annually to Progressive Medicine.

Dr. Crandall has written largely upon the legal and civil relations of the medical profession. In 1907 he was appointed to the New York State Board of Medical Examiners and in 1906 he served on the Hospital Commission appointed by the Mayor of New York.

Dr. Crandall has been active in medical society work from his earliest years of practice. At various times he has been Recorder of the American Pediatric Society, and Member of its Council, Chairman of the Pediatric Section of the New York Academy of Medicine, and Chairman of the Committee on Admissions, President of the West End Medical Society and President of the Society of the Alumni of Bellevue Hospital. In 1893 he was one of the English speaking secretaries of the Pan-American Medical Congress. In 1905 he was elected first Vice-President of the Medical Society of the County of New York. A year later he was elected President of the Medical Society of the County of New York, that year being one of exceptional importance in the history of the society. Upon the expiration of his term of office he became Chairman of the Board of Censors which gave him supervision over the legal work of the society. He was a second time elected to the Board of Censors in 1916, and at the time of his death was its Chairman.

In addition to the societies mentioned, Dr. Crandall was a member of the American Medical Association, and a member of its House of Delegates, the American Congress of Physicians and Surgeons, the National Association for the Prevention of Tuberculosis, the American Society for the Study of Epilepsy, the National Geographic Society, the Medical Society of the State of New York, and a member of its House of Delegates, the New York State Historical Society, the Harvey Society, and the Civil Service Reform Association.

From May, 1912, to May, 1916, he was a member of the Committee on Publication of the Medical Society of the State of New York, the last two years acting as Chairman. On March 15, 1916, he was appointed Secretary of the Medical Society of the State of New York, and was elected Secretary in 1917, 1918, 1919, so that he held this position and was actively engaged in discharging the arduous duties of the office up to within three weeks of his death. In June, 1918, when the stress of the war called for the services of many medical men, Dr. Crandall assumed the Acting Editorship of the New York State Journal of Medicine, and filled that position in addition to his duties as Secretary of the Society. Upon the return of the editor, he continued his interest and activities in the Journal, assuming the position of Assistant Editor.

Dr. Crandall was a physician who gave much to his profession, and stood for the highest ideals. He was untiring in his efforts to help and improve the profession. He was well known in his capacity as Secretary of the State Medical Society, a position which he filled with marked ability and to which he devoted much time and energy. Dr. Crandall died November 19.

E. L. H.

THE PLASTIC SURGICAL RESTORATION OF WAR INJURED FACES.*†

By GEORGE V. I. BROWN, M.D., F.A.C.S.,
Lieut. Col., M. R. C., U. S. A.,
MILWAUKEE, WIS.

THE story of war injuries of the face and jaws quite naturally divides itself into two general classifications.

1. The immediate repair of wounded parts as it was conducted in the overseas hospitals.

2. The final restorative treatment as now being conducted in the more permanent hospitals of this and other countries.

It is with the second division that we are chiefly concerned at this time for large numbers of returned soldiers, with an almost infinite variety of physical defects resulting from war wounds, who at the present time are being cared for at hospitals under Army control, will ultimately pass on with disability discharges, and further surgical improvement will probably be required at the hands of civilian surgeons through the Public Health Service or otherwise.

These face and jaw defects as I have had opportunity to observe them at the U. S. Army Hospital No. 11 at Cape May, New Jersey, the hospital to which for a time all Head Surgery cases were sent, and later as Chief of the Maxillo-Faciale Service at the Walter Reed Hospital, Takoma Park, Washington, D. C., which was one of three hospitals designated for these cases, may in a general way be classed as follows:

1. *Injuries Affecting the Bones of the Face and Jaws.*

(a) Ununited fractures in which a pseudarthrosis has become established because of continued septic conditions, the interposition of tissue between the bone ends, imperfect immobility or other disadvantageous factors but in which direct contact of the bone ends is practicable.

(b) Cases in which there has been loss of sufficient bone to require bone grafts for restoration.

(c) Deformities caused by the malposition of fractured bones, the loss of bone structure without fracture, the malformation or displacement of bones by traumatic injury without actual fracture, and the effect of these conditions on overlying or associated muscular and other tissues.

(d) Partial or complete ankylosis or chronic disturbances at the temporo-mandibular articulation.

(e) Fibrous bands of tissue limiting jaw movement in various situations between the jaws.

(f) Malocclusion of the teeth and displacement of the jaw fragments by perverted muscular control without the restraint of opposing muscular activity through lost jaw attachments.

2. *Soft Scar Tissue Defects.*

(a) Scar contractions adherent to bone surfaces causing deep depressions and limiting muscular movement.

(b) Other deforming and disfiguring scars not directly adherent to bone.

(c) Scars that are of themselves simply unsightly without causing deformity of the surrounding structures.

(d) Loss of tissue leaving surfaces to be restored by the transposition or transplantation of tissue from adjacent or distant parts.

3. *Special Injuries.*

(a) Salivary fistulate following the repair of wounds involving the salivary glands or their ducts or both glands and ducts.

(b) Nasal and orbital defects through complete loss of these organs, or from injuries to or partial loss of the soft parts such as the eyelids, the nasal cartilages, etc.

4. *Foreign Bodies and Sequestra of Bone.*

There are certain principles the observation of which immediately at the time of injury is vitally necessary for the success of subsequent corrective treatment. For example: The loss of a portion of the horizontal body of the mandible presents the alternative of forcing the fragments apart in order to bring the teeth into normal occlusion, in which case only a fibrous union must result, and a bone graft be required later on unless a permanent prosthetic appliance be worn continuously, or the drawing forward of the ramus to permit of its being attached to the end of the remaining jaw without regard for the disarrangement of the occlusion of the teeth.

Both of these methods have been strongly advocated, and both have been quite extensively employed. Basing judgment on the results as shown by many cases treated by both methods in the overseas hospitals that came under our observation after their return, it appears to be safe to conclude that each of these methods of treatment has its advantages, and both have disadvantages which should be avoided as much as possible.

Even though there may be considerable disarrangement of the occlusion of the opposite sides of the jaw when the remaining portion of the body of the mandible is brought into contact with and sutured to the ramus, the advantage of immediate healing and consequent relief for the patient which this procedure makes possible is one of no little importance. As a matter of fact the ramus comes forward to meet the difficulties of the situation in an almost unbelievable degree, and if allowed to slide by on the outside of the upper jaw so that its anterior border does not meet the tuberosity of the maxilla in closing the mouth, thus preventing complete closure, a very considerable readjustment becomes possible and the disadvantages of disarranged tooth occlusion correspondingly improved. On the other hand in cases such as that shown in the moving picture film, the key to the whole situation lies in first securing immobilization of the jaw fragments, and much depends on the manner in which the parts are forced to their normal relations, and the lost muscular functional activity restored. Failure to do this in the care of the young man whose case is illustrated resulted in long months of unnecessary discomfort, during which the bone ends were drawn inward and turned in such malposition by the loss of the counteracting muscular control that there was constant irritation of his tongue, and as this condition became worse through scar contraction there was almost no space left for his tongue except with his jaw hanging and mouth half open, and constant drooling of saliva which was in itself a very serious annoyance.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 8, 1919.

† In publishing this article it has been found impossible to include all the illustrations which were presented at the time it was delivered.

The methods of treatment required in these cases may be broadly described under two widely applicable distinctions.

1. Those in which immediate correction may be accomplished by uniting adjacent bone or soft tissue surfaces.

2. Those in which by reason of lost tissue and the unfavorable condition of surrounding parts, it has become necessary to transpose or transplant similar or at least favorable structures or by artificial means to supply a substitute for the lost parts, either to restore function or to improve cosmetic appearance or both. Under these two heads may be included practically all of the many and often wonderfully ingenious devices that have been applied to the surgical and mechanical restoration of the war injuries and other facial disfigurements.

The first group includes bone injuries which may require simply a proper approximation of the divided surfaces and their fixation by suitable splints or wiring as may be indicated and wounds that can be closed by direct approximation with the aid of wide undermining if necessary. Under the second group, we find an almost infinite number of operative procedures which again require subdivision for intelligent comprehension of the possibilities of their application. The most important of these may be enumerated as *flap sliding* or covering the defect by making suitable lateral incisions and moving adjoining parts into the desired position as is extensively done in the closure of cleft palates and other procedures which require similar methods of treatment.

Pedicled flaps from near by parts twisted and laid over the denuded areas. *Pedicled flaps from other parts of the body* held in place until union has taken place and the pedicle divided at a later operation. *Double pedicled flaps. Double epithelized flaps.*

A study of the literature, particularly text books on the subject of plastic surgical operations brings forcibly to mind the need of the observance of a principle, the real importance of which becomes more and more clearly understood as the operator's experience in plastic surgery becomes extended, namely, that an operation is not warranted even though it may effect improvement in the correction of a specific deformity or defect if it be of such character as to create another deformity which, although different, may nevertheless be quite as unsightly or otherwise disadvantageous as the original one. Clinical examples and almost unlimited illustrations in the surgical literature pertaining to such operative procedures give striking testimony of the truth of that statement. While it must be admitted that pedicled flaps from distant parts can be successfully placed and sutured to supply lost structures, this should never be done until the possibilities of closure of the wound or relief from the defective appearance by the use of surrounding or closely adjacent tissues have been fully exhausted or after due consideration found to be impracticable. It goes without saying that when the transfer of tissue in this manner does become necessary, that the selection of the site from which the flap is to be raised must be governed by the similarity of the tissue to that surrounding the defect and the facility with which the parts may be kept in suitable position to permit successful establishment of union and growth until such time as the pedicle may safely be cut and the final suturing in the new situation accomplished. Flaps from the forehead, according to the Indian method, have long been successfully used to cover nasal and facial raw surfaces.

The Italian method of suturing a flap raised from the arm and binding the arm to the head for a sufficient period to permit union has also been more or less extensively used since the time it was illustrated in 1592, and perhaps earlier. Both of these methods in properly selected cases may be of great service, yet with better understanding of the possibilities of plastic tissue adaptation as with the great natural supply of very elastic easily adapted tissue that may be raised from the neck, including part of the platysma and overlying fascia and loose skin, it rarely becomes necessary to resort to expedients which at best must leave a large scar surface upon the forehead even after careful skin grafting has been successfully performed, or a mass of tissue covered with the soft white hairless skin from the arm which to the very last has a more or less unnatural appearance. Really great wound and otherwise deformed and disfigured surfaces affecting the face and jaws may sometimes successfully be covered with slight risk of failure through insufficient blood supply or other reason by any of the well-known methods of utilizing neck tissue for this purpose. Fig. 1 illustrates the method by which depressed scars may be removed and the contour of the facial outline restored by careful excision of the scar itself, dissecting away all scar tissue that may be reached without actually entering the vestibule of the mouth and wide undercutting to free the tissue for a very considerable distance from the border of the wound in every direction. The wound is closed by suturing with rows of deeply buried catgut sutures, over these again gut sutures are passed through the fascia and muscles under the skin, and final coaptation of the skin borders with horsehair and 1,500 to 2,000 fine vaselinized linen. Tension is relieved and the parts held in right relation by a silk worm gut button suture secured well back from the skin border. This is placed at the point of greatest tension with adhesive tissue protection between the skin and the button to prevent irritation and the marking of the skin by the metal under pressure and the suture from cutting and thus scarring the skin. The adhesive plaster held by the button above it gives a very much greater and safer resistance than any kind of suture alone, which no matter how securely the buttons on a skin surface may be placed has nevertheless, only such resistance as may be offered by the suture against the opposing tissue and which when unsupported so often gives the unsightly scars that mar otherwise perfect operations. A type of scar that frequently followed the earlier methods of suturing large war wounds showed a depression at some central point from which scars radiated in different directions as in Figs. 2a and 2b. My personal belief is that any attempt to completely eliminate these scars at one operation would inevitably result in some degree at least in a return of the old defect at the central point where the scars meet. To obviate this I am accustomed to remove the depression and restore the outline of the cheek, as described and illustrated in Fig. 2b and at the same time instead of attempting to extirpate all the other scars to so change their form that at a subsequent operation additional scar tissue may be removed with still further improvement of the facial contour and without danger of the recurrence of the depression.

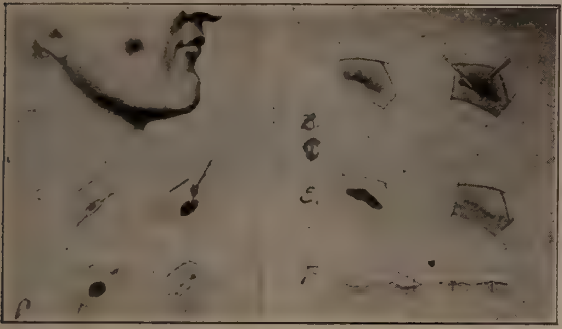


Fig. 1—(a) Depressed scar. (b) Dissecting out the scar. (c) Silkworm gut tension suture secured with silver buttons held with lead shot laid on adhesive plaster for fixation. (d) Outline of area undermined completely around the wound. (e) Wound closed with 2,000 fine linen sutures. (f) View showing the manner of closing the wound with rows of buried cat gut sutures to prevent recurrence of the depressed surface.

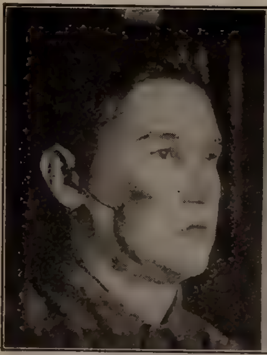


Fig. 2a—Shell fragment wound. Scar that produced a serious case of trismus; was relieved by an operation. Picture before operation; forcing jaws apart unsuccessful until after.

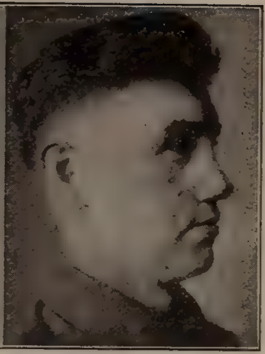


Fig. 2b—Shows scar after operation, jaws forced apart. Double result was obtained in this case; disfigurement removed and trismus cured.

It should never be forgotten that the form of soft parts must necessarily be governed by the underlying bony framework. When this has been destroyed it should be restored if possible by bone grafting, but when this is not practicable a properly made appliance of vulcanized rubber

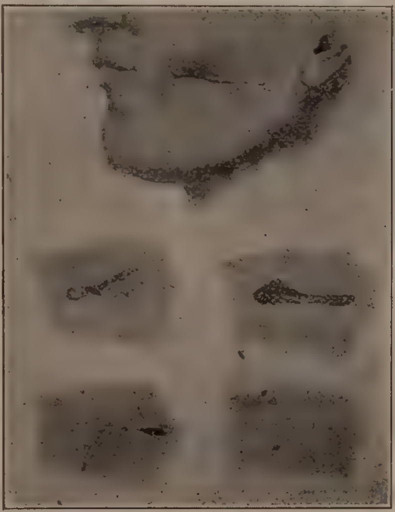


Fig. 3—Shows the method of the operation as performed for the young man whose case is illustrated in Figs. 2a and 2b to remove the deeply depressed transverse portion of the scar and relieve scar contraction.

may be molded and trimmed to fit the parts and so formed as to supply exactly the desired contour. Over this the soft tissues are laid and adjusted in such manner as to give the desired appearance. This plan has been extensively followed in the European Hospitals and in large measure is responsible for many of the really wonderful plastic results obtained when the soft parts were made to fit over the appliance and sutured with it in place. Examples of this plan of treatment are shown in other illustrations of cases from French, British and German Hospitals. In the final surgical reconstruction of these cases such an appliance not only serves to preserve temporarily the outline of the face, but also gives a permanent support when worn after the healing of the reconstructed parts has been accomplished. The same method has been found to be exceedingly satisfactory and apparently is the only completely satisfactory method of restoring the symmetrical appearance of the lips and face when these have been marred by the scars and deformities which so often follow imperfect harelip and cleft palate operations as shown in Figs. 4a-4b. In the management of the deep extensive scars of war wounded soldiers, it was found that owing to serious disarrangement of the circulation at the time the earlier operations were performed soon after injury, or because of the serious infections which affected these exposed war wounds, that the weakened resistance as it pertained to the healing of the wounds made during the extirpation of these scars rendered them exceedingly susceptible to infection at the time of the final operation for restoration of the parts and these tissues did not heal as spontaneously as would be expected in normal cases. It also became evident that from six months to a year was none too long a time to allow for the re-establishment of a dependable circulation in these cases before additional movement of the parts and reconstructive operative treatment might safely be undertaken. The second vital consideration is that wherever there is distortion or loss of important parts of an anatomical field, particularly in the face, there is not only the defective outline to be considered but also changes due to the altered functional activity of the parts. It is this which makes such defects progressively become worse and more noticeable or gradually improve as time goes on. Therefore, the logical treatment of all these war injured faces is to some extent the same as would be the treatment of any similar facial defect from other than war causes. In cases where operative treatment as described and illustrated in Fig. 1 for simple depressed scars would be insufficient the adjoining tissues must be called upon to supply the deficiency. This may sometimes be done by raising pedicled flaps and sliding them directly over the area to be covered. When necessary to have epithelium on both sides, it can be accomplished by turning a flap raw side up and skin side in, then over that laying another flap raw side down skin side up and securing these with sutures in such manner that when the wound heals there will be skin lining under and skin covering over the site of the operative correction. When this is not practicable a Tiersch graft can be rolled about a piece of dental modeling compound or, better still, gutta-percha either of which may be moulded to fit any particular cavity to be covered after the method described by Esser. This mould, with the raw side of the Tiersch graft outward and the external skin surface next to the mould, is slipped into the tissues and secured with sutures and is applicable for cases in which it becomes necessary to line with skin a cavity such as the mouth or orbit. After the skin has formed an incision along the inside of the cavity to be lined, down to the mould, permits its removal, and leaves a dermal tissue lining. A Wolf graft containing all the layers of the skin, although it goes through a discolored stage of desquamation later on and may become quite black, thus sometimes confusing those who are not accustomed to the use of these grafts by this unfavorable appearance, will nevertheless usually clear up and in most cases will leave a good foundation for the site of a second operation if for any reason one should be necessary. To that extent these epidermal, dermal grafts may be considered preferable to the Tiersch graft, but in many respects, for ordinary cases the Tiersch graft is much more satisfactory. One should be familiar with both in order to decide wisely as to their use. In grafting bone and transplanting cartilage it seems to be quite well established that in cases where a bone graft with the periosteum attached may be placed in firm contact with bone its usefulness is reasonably well assured if it be properly inserted and

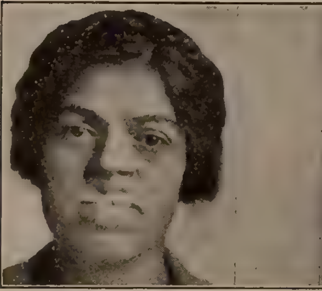


Fig. 4a—Young woman with lip and nose deformed and deeply scarred by an operation performed in infancy to correct double harelip, and loss of bone structure in the anterior part of the upper jaw in attempts to close a cleft palate.

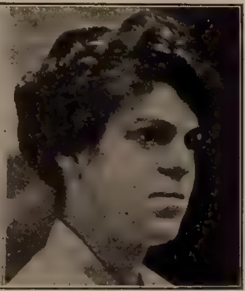
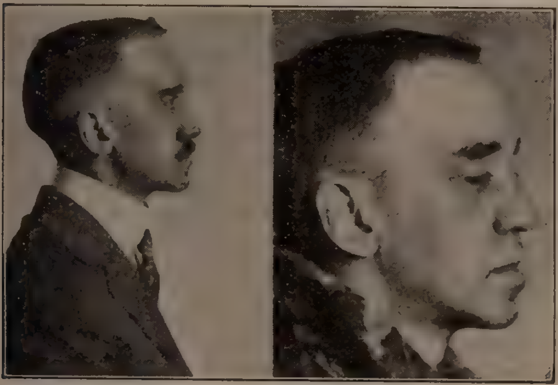


Fig. 4b—The same young woman shown in Fig. 4a after an operation to correct the lip and nose defects, and with a prosthetic appliance worn in the mouth to hold the parts in normal position.

its fixation firmly secured, but when the graft is to be inserted at a point where it will be surrounded by soft tissues, a cartilaginous transplant is preferable because under these circumstances bone sometimes absorbs very rapidly, whereas cartilage appears to take quite kindly to surroundings of this character. Therefore in the case shown in Figs. 5a and 5b replacement being required over an area exposed by the destruction of the external wall of the frontal sinus, the sinus having become filled in with granulation scar tissue against which the supporting structure was placed, it was deemed decidedly preferable to use a rib cartilage for a transplant instead of a bone graft at this point. The nose shown in Figs. 6a and 6b was grafted according to the method followed by Dr. Lee Cohen, of Baltimore, and inserted through an incision along the inner surface of the naris through the external wall down to the border of the nasal bone. The periosteum and overlying tissues of the nose were raised from the bone completely along the dorsum and both lateral surfaces. The graft was so cut from the rib as to include the cartilaginous junction and therefore contained both bone and cartilage. When the graft was inserted the bone rested upon the nasal bones and the cartilage supplied the necessary outline to the cartilaginous portion of the nose.

Figs. 5a and 5b—These are pictures of a young man taken before and after the insertion of a rib cartilage transplant to fill out a depression caused by a shrapnel wound entailing loss of the anterior wall of the frontal sinus on the right side.



Figs. 6a and 6b are photographs of a man with saddle nose due to early traumatic injury and the same case after the correction of the defect by the insertion of a bone and cartilage taken from a rib and placed through an intra nasal incision without external scar.

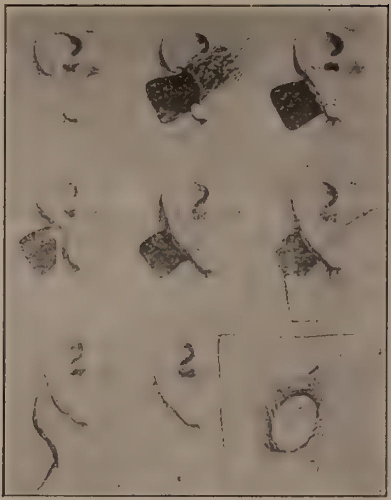


Fig. 7—Drawing showing the first step in the surgical restoration of an ear that was almost entirely lost by a war wound. Tissue from behind the ear was folded upon itself to give double epithelized surfaces. The exposed area was covered by a flap from the neck. A rib cartilage transplant was inserted.

In the case of the ear that was restored as shown in Fig. 7 a flap was raised from behind the ear folded so that there would be epithelium on both sides and sutured to the small remaining portion of the ear cartilage. In this case also a cartilaginous graft from the rib

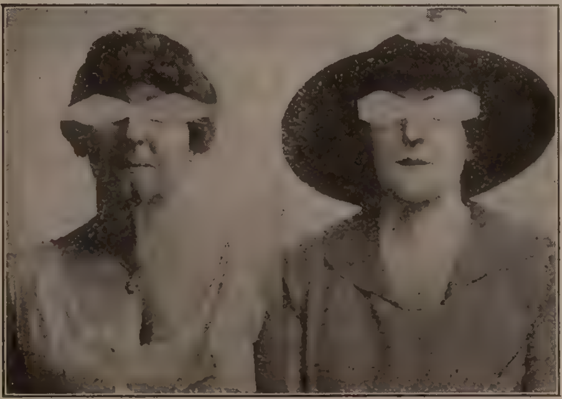


Fig. 8—These two pictures illustrate the fixation of mandibular fragments and the restoration of the form of the chin and outline of her neck by the successful placement of an osteo-periosteal graft after the plan followed by Le Maiter of Paris and the excision of a congenital band of fibrous tissue that extended from jaw to the clavicle and held the head bent forward in a decidedly unsightly position.

Pseudarthrosis resulting from an ununited surgical fracture had existed since infancy. Through the opening made by excision of the neck tissue exposure of the mandible was secured, the bone ends freshened and two tibial grafts inserted. Each graft carried periosteum and a thin bone shaving. One was laid with the periosteum turned inward and the bone outward. The other was placed over the inner graft with the periosteum outside and the bone surface faced inward.

Firm union and an improvement in appearance were the gratifying results.

was inserted between the two layers of the tissue when folded together to give stiffness and to hold the ear in place. The raw surface caused by the raising of this flap was covered by tissue carried up from the neck and sutured directly with complete skin approximation throughout.

In such cases additional operative treatment is required to restore such form as may be lost by contraction following the healing processes. Much may be done to enhance the cosmetic effect by step-operative treatment.

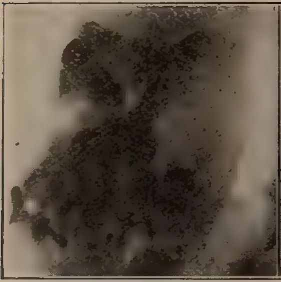


Fig. 9a. Radiograph of a jaw taken just before a bone graft was inserted on December 1, 1919.

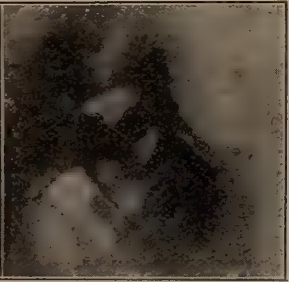


Fig. 9b. Radiograph of the same jaw shown in Fig. 9a with a tibial bone graft securely in place, taken January 15, 1919. A splint similar to the one described on the left was inserted for me in this case by Lieutenant McCauley of the U. S. Army Dental Corps.

Bone grafts for the mandible, according to my experience, are, in the majority of cases, best made according to the Albee method of tibial graft cut with an Albee saw, although the osteo-periosteal graft (see Fig. 8) and the pedicle graft are very useful in many cases. The mandibular bone ends should be exposed through an exernal incision along the border of the jaw without penetration into the mouth. The graft is placed in the grooves cut by the same double saw with which the tibial graft was cut (see Figs. 9a and 9b), and sutured into place with kangaroo gut. The chief difficulty in such cases is to secure complete immobilization. If the anterior teeth are wired together a fairly good amount of security in the way of immobilization may sometimes be secured, but under a general anæsthetic vomiting is a serious menace when the jaws are fastened firmly together unless their separation can be quickly effected. Difficulty in keeping the mouth clean is also an objection to this method. A plan that has been widely employed and found to be quite satisfactory is to insert splints which fit the upper and lower jaws separately and perfectly. These are so arranged that when the jaws are closed there will be firm contact along the occlusal surfaces. An ingenious construction allows a tube upon the splint of one jaw when the mouth is closed to come exactly in line with and between two short similar tubes attached to the opposing appliance through which a pin may be inserted after the appliances are firmly cemented to the teeth. In this way the best possible fixation of the jaws can be secured, while at the same time it is possible to take out the pin that goes through the tubes of the appliance to hold the parts in position and thus set the jaws free instantly if necessary. The parts may again be brought together accurately with the parallel tubes exactly in line and the pin replaced without fear of the jaws getting out of alignment. The splints illustrated from overseas cases (a) show devices arranged so that when the jaws are closed these sliding metal flanges force the fractured jaw into perfect alignment with the upper; (b) shows another form of the same appliance, but this time so adjusted that the jaws are slightly apart, the intention being to provide for any accidental occurrence that might result from sea sickness and which would be a menace to men with jaws firmly fastened with the teeth in contact. Still another form of splint is shown with little hooks along each jaw by which with the appliance cemented into place the tying of ligatures between the small hooks that are arranged for this purpose will hold the jaws firmly in good alignment, with always the possibility that the jaws may be released in case of emergency by cutting the ligatures. An interesting case of injury which so relaxed the muscles which are in relation with the temporomandibular articulation as to cause chronic dislocation is also illustrated. Unless watched the jaw would slip out of the glenoid cavity upon very slight movement. The appliance shown helped to overcome this by making pressure just anterior to the head of the condyles on each side, but the disadvantage this man experienced was that the continual pressure of the spring of the appliance as it passed over his head evidently brought about absorption and in that way caused more or less nerve irritation and consequent pain. The proper remedy in such cases is to insert an appliance cemented to the teeth and so arranged that the jaws may close but cannot open beyond a certain point. While there is a measure of similarity between most of the plastic operations, and certain well-known methods are variously used in cases for which they are adaptable, there are nevertheless such differences between the condition of practically all cases that each becomes individual in the requirements for its treatment. It is the recognition of these distinctions and the measure of the operator's ability to meet their surgical requirements that governs the final result. The individual preferences of one operator might not be at all vital or essential for another who might meet the desired end in quite a different way. In my own experience I have found it necessary in some cases to plan the details of the operation as the work proceeds, trusting to judgment of the tissue as actually found in the course of the operation to determine the best method of procedure, particularly with reference to the extent with which free incisions must be made, the size, thickness and character of the flap and similar considerations. This is usually the case if the field of operation is one in which previous operations have been performed, or if through extensive injuries there has been marked change in the tissues at the operative site such as extensive scar formation, disarranged muscular alignment or any conditions which render the structure to be operated upon uncertain in character. Under these circumstances there is always danger that if incisions are made or the flap fashioned according to some preconceived idea of what ought to be, disaster may follow. The conditions are actually changed and what might be done in the way of surgical operative treatment with quite normal conditions is found to be impossible for the abnormal situation that must be met. If in performing the operation the operator feels his way along stretching and testing fibers of resistance, observing muscular activity that may be antagonistic and in various ways judging as he progresses with the operation as to the best manner in which to proceed, just how far the resistance of circulatory and other influences may be ignored or their indications followed and in other respects adapting the operation to the conditions as he finds them, good results are much more safely guarded than would otherwise be the case. In certain other cases the form outline of the proposed flap or of the graft must be very accurately decided upon in advance and followed religiously throughout the operation. Recognizing this difference it is my custom to make radical distinction between these two types of cases, and when practicable I carefully prepare a pattern of the exact size and form of the flap or graft as may be and for greater accuracy and convenience use metal patterns. These are cut in size and form to conform to a pattern already worked out in tin foil, paper or other suitable material which can be laid upon any surface and the exact form and measurements secured allowing, of course, approximately a third and sometimes a little more for the contraction and alteration of the transposed tissue. To the metal form a piece of wire is soldered in such manner as to enable the operator to place it upon the surface from which the flap is to be cut and held firmly in place while a knife is run around to mark the outline, after which the flap or graft can be cut in the usual manner.

A discussion of this subject at this time can at best be only a half told tale. The urgent requirements of these battle-scarred men in the very prime of young manhood though veterans in terrible experience have so stirred the world and such a concentration of skilled surgical energy upon the plastic surgery of the face and jaws has resulted therefrom that the progress of this work is going forward by leaps and bounds. Operations that were unusual yesterday, are today commonplace.

THE EPIDEMIOLOGY OF INFLUENZA.*

By PAUL B. BROOKS, M.D.,
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EARLY in our experience with the recent pandemic of influenza most of us had arrived at certain fairly definite conclusions regarding the epidemiology of the disease. As the epidemic progressed and various observers had opportunity to compare notes, we were left with but one conclusion to which we could adhere without fear of having to retract from our position: *that we still had a great deal to learn.*

Although reporting of influenza cases was required during the epidemic, the records of reported cases are scarcely more than rough estimates and are of little statistical value. The New York State Influenza Commission, however, shortly after the subsidence of the epidemic, caused house-to-house surveys to be made in two of the most seriously affected third-class cities of the State—Oswego and Watertown. The figures so obtained, with those from similar surveys made by the Public Health Service in certain sections of Maryland, covering in all approximately 25,000 cases, are fairly reliable, allowing for a reasonable margin of error as to diagnosis.

CASE INCIDENCE AND FATALITY.

A study of the combined figures gives results in accord with previous impressions relative to incidence of influenza and pneumonia in various age groups. The largest percentage of cases occurred among persons under 20 years of age—notably between 5 and 14 years. On the other hand, case fatality was lowest in this group and highest between the ages of 20 and 40.

In the combined areas surveyed, approximately one-third of the population was affected. In Oswego, which probably was the most seriously affected city in New York State, over 50 per cent of the population was involved.

Just why the fatality was greatest among persons between 20 and 40 years of age—the "military age"—remains to be determined. It has been suggested that the causative agent acquired its new virulence as the result of infection having been passed rapidly through individuals of this age in military camps and that it "thrived best in the soil in which it was introduced." Whether or not this is a logical explanation is a question we must leave to the bacteriologists. On the other hand, it was a common observation that complications were unusual and recovery the rule among persons who went to bed promptly upon being attacked and remained there for several days after apparent recovery. The fact that the group between 20 and 40 years of age included individuals least likely or able to observe this precaution, may have had something to do with the fatality.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 6, 1919.

It was noted at Camp Devans (Maj. Wooley, *Jour. of Lab. and Clinical Med.*, Mar., 1919) that the death rate was highest among men recruited from rural sections. Death records in Massachusetts also indicated that death rates per hundred thousand population were lowest in cities of over 100,000 population and increased progressively with decline in the scale of population, being many times higher in rural towns.

Methods of Communication.

There seems to be no reason to question the common conclusion that influenza is disseminated through individual contact. There have been innumerable instances in which it has been possible with reasonable certainty to connect individual cases with single exposures to known cases in the catarrhal stage.

Institutions rigidly quarantined against the outside world have wholly avoided infection during the epidemic and after relaxing quarantine have immediately had outbreaks. Through closing schools, children kept isolated at home have avoided infection, only to contract the disease immediately after return to school.

It has seemed equally obvious that the infective agent is present in the mouths and noses of those who have the disease, especially in the earliest stage, and in at least some instances for a time after recovery. The assumption has been that the infection is spread by dissemination of infected discharges through coughing and sneezing or upon hands or articles freshly soiled.

There has been some question as to the channels by which the infective agent has gained its entrance. Since influenza is primarily a respiratory affection, the natural conclusion would be that infection would most often be acquired by aspiration of infected material. Vaughn and others, from observations in military camps, conclude that hand-to-mouth infection, made possible chiefly through a system of individual dish washing in common wash-cans, was the important factor in the Army. Nicolle and Lebailly have reported success in producing the disease in a monkey and in human beings through subcutaneous injection of secretions from the bronchial tract of an infected person.

At a time when we were beginning to feel that we were learning something about the epidemiology of influenza, the report of the failure of Rosenau, Goldberger, McCoy and others to produce the disease in any one of two large and carefully selected groups of men, cast a shroud of doubt over the whole subject. It would appear, however, that these experiments were valuable as a study of immunity, but after all do not justify us in discarding our previously conceived ideas as to methods by which influenza is disseminated and acquired.

Preventive Measures.

These may be classified for purposes of discussion into measures for general and individual application.

The *general measures* applied during the epidemic varied from attempts to isolate cases to complete closing of all places of public assemblage and absolute quarantine against the outside world, as in certain institutions.

No one will question the desirability of isolating individual cases. A thoroughgoing quarantine of all individuals in an affected household would limit, or at least postpone, the spread of infection, chiefly through control of contacts. Such a measure, however, is impractical, both because of rapid spread of the disease and the large number of individuals who would be restricted.

Regarding the closing of schools and places of amusement, there can be no hard and fast rules.

As to schools, there can be no question but that children in thickly settled sections of a large city, especially in cold weather, are at least as well protected while under supervision in school as when, as one health officer expresses it, they are "sitting on the curbing or over the stove in a tenement kitchen." In residence sections and in small communities where children out of school will be kept at home, closing tends to delay the spread of the disease and to spread the local outbreak over a longer period. During the recent epidemic this was an advantage, both because of the lack of physicians and nurses and because the late infections were, as a rule, less severe.

As to moving picture theatres, and other places of amusement, there is little evidence to prove that closing had any effect upon the progress of the epidemic, while it undoubtedly increased depression and panic. Limiting admissions to a reasonable seating capacity, requiring adequate (but not excessive) ventilation, enforcing regulations in regard to coughing and sneezing, while taking advantage of the opportunity to promote public health education, proved equally effective. It should rarely, if ever, be necessary to close churches, in which overcrowding is not a factor, or to prohibit lodge meetings or other gatherings of a semi-private character.

The one measure for individual application over which there has been discussion is the use of the face mask. Assuming that a gauze mask is properly constructed, changed frequently, always put on with the right side out, and the hands kept away from it and from the mouth, there is no question but that it might serve as a protection to an individual especially exposed. But as a practical measure for general application it has little to commend it. Some one has suggested that a diver's suit would be more effective. In one cantonment it is said that dentists were required to wear masks for the protection of their patients and that practically all of the dentists contracted the disease.

If experience with influenza epidemics in the past can be accepted as a criterion, we can look forward to recurrence of influenza annually for the next two or three years. It is earnestly to be hoped that, before we are again confronted with the problem, research will have resulted in the development of some effective means of protection. In the meantime we should not overlook the fact that there is one measure which, though not directly related to epidemiology, is effective in reducing fatality—organization in advance for providing victims of the disease and their families with prompt and adequate medical and nursing care and material relief.

To Recapitulate.—The incidence of influenza in the recent epidemic, was greatest in the first two decades of life, especially between the ages of 5 and 14; most fatal in the two later decades.

From thirty to fifty per cent of persons in seriously affected communities were infected.

Fatality was apparently greatest among rural population.

The disease is spread by contact, presumably by dissemination of infected discharges.

Groups of individuals isolated from contact with the outside world will, for the time, escape infection.

The infective agent apparently gains access to the body through aspiration or swallowing of infected material.

There is apparently a well defined immunity not yet understood.

Quarantine of cases is not practicable.

Whether schools and places of amusement should be closed is an individual question in each instance.

The use of gauze masks, for general application, cannot be recommended.

One measure alone is *known* to be effective in lowering the death rate—organization of relief which will make it possible for affected persons to go to bed when attacked and to remain there until fully recovered.

CLINICAL ASPECTS OF INFLUENZA*

By WILLIAM R. WILLIAMS, M.D.,
NEW YORK CITY.

IN speaking of the clinical aspects of influenza, by which we mean, of course, the disease or diseases that we have encountered so frequently during this season, one is confronted by many doubts. In the first place, what do we mean by influenza; that is, just which cases of illness should we exclude? A definition that would really meet the conditions is hard to formulate. In this connection, it is interesting to look back to see how previous observers have attempted to define the disease that they met with under the name of epidemic influenza. Dr. Delafield's definition is interesting and comprehensive. It is this: "Epidemic influenza, an infectious disease, caused by the presence and growth of the influenza bacillus, characterized by a rise of temperature, prostration, pains and inflammations of different parts of the body. The parts of the body which may be inflamed are the pia mater, the peripheral nerves, the mucous membranes of the nose, throat, larynx, bronchi, stomach, and colon, the lungs, the pleura, the pericardium, the endocardium, the muscles and skin. In any one case either one or several of these inflammations may be present." Later, in his description of the disease, he includes in the list of inflamed organs the kidney.

This definition would seem to cover our cases. The definitions given by other writers are quite as comprehensive and quite as confusing.

It is of course unseemly that I should tax your patience by detailing to you all of the different symptoms and clinical types of cases that we have encountered this season, but there are a few questions in connection with the clinical aspect of the disease that I should like to consider rather briefly.

The first one is whether or not we have been dealing with one disease or several. Have we had an epidemic of a single disease or has it been an epidemic of respiratory diseases with occasional cases of disease of the other parts of the body that simply have occurred at the same time? The incidence of the disease, the way in which it has spread, the large number of patients who have been attacked, and the different combinations of the organs attacked, suggest strongly that one versatile cause must have been the starting point in them all. The relation of secondary infections to this cause must be fought out by bacteriologists and pathologists.

Another question that arises is this: Are we dealing with the same disease that had previously been described as influenza, notwithstanding the fact that this epidemic has surpassed all former epidemics in severity? Insofar as we can judge by the descriptions of the previous epidemics, one has the impression that the disease is identical with its predecessors. Some have maintained that the absence of an influenza, that is, rhinitis, points to an essential difference between this epidemic and the others. However, in the first hundred of our cases thirty-four gave a history of cold in the head. This is a fair incidence in so varied a disease, and, anyway, perhaps a nasal catarrh was never a very important lesion. During this epidemic we have gained additional information on many points that were less closely studied heretofore. The leucocyte count is one of these. We have all been surprised by the large number of cases of pneumonia with a low leucocyte count. A study of the histology of the lesions and of the bacteriology has not lessened our confusion. The question has arisen whether the leucopenia was an expression of a lack of resistance on the part of the patient or whether it was due to the fact that the infecting organism was not one of those that summoned the polynuclear leucocytes to battle. If we could show that in general the patients with low counts did badly, while those with higher counts did well, the cause of the leucopenia might be considered to be a lack of resistance on the part of the patient. I do not, however, think that our statistics really demonstrate this, although it has been claimed that such is the case. To reach a conclusion on this point, I have gone over the records of a number of cases on my service at New York Hospital last fall. As you will understand, the crush of work prevented as complete a study of the leucocytes as we would wish; but we still have a good many cases whose white cells were counted. Many cases entered the hospital in a dying condition, and frequently the blood count was omitted. We have, however, in our first hundred cases blood counts on about sixty of them. Most of these cases came in with an actual pneumonia, having been sick on an average of more than six days previous to admission.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 6, 1919.

The average leucocyte count was 10,561. Of the patients who recovered the average count was 10,885; of those who died, the average count was 10,237. This difference is altogether too small to justify any such conclusion as the one suggested. Our highest count was 30,000—this patient died; our lowest count was 2,800—this patient also died. Both had a double bronchopneumonia. Of the seven counts above 20,000, the two with the highest counts died; the remaining five recovered. Although I have not a sufficient number of cases whose blood was counted several times to demonstrate anything, yet I have the impression that it was rather common for the blood count to increase from day to day, regardless of the outcome of the case, and therefore I feel that the blood count is in some way related to the development of the lesion rather than to the factors that bear immediately on prognosis. I know that some observers have published figures to bear out the contention that the leucopenia meant a bad prognosis, but so many patients got well with a low count, and so many others died with a high count, that the evidence seems to me rather questionable.

Another point on which I wish to speak is the relation between the temperature curve and the nature of the infecting organism; or perhaps I should say of the organisms found in the lesions. The only cases that would be valuable in answering this question are the fatal cases that came to autopsy and where the lesions were carefully studied from a bacteriological point of view. In the autopsy cases many of the lungs show more than one type of organism, and the occurrence of this multiple infection might be expected to modify the temperature curve. I have, however, the charts of eight cases whose lungs were studied bacteriologically by Dr. Anna Williams where the cultures showed a practically pure growth of a single organism.

The first chart (4911) is from a patient who died with some consolidation in both lungs, the rest of the lung hemorrhagic. The patient had been very cyanotic. He died after an illness of four weeks. The influenza bacillus only was found in his lungs. His temperature curve, as you see, is rather sustained, although on some days the remissions were as much as three de-

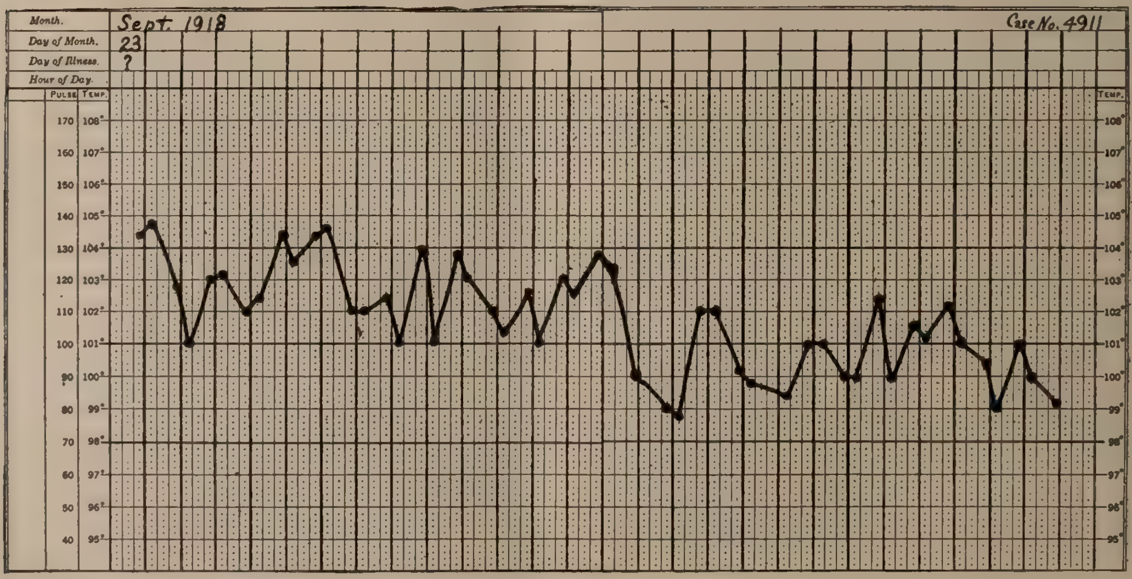

CHART NO. I. AUTOPSY SHOWED PURE CULTURE OF INFLUENZA BACILLUS grees, and on the whole during the last ten days the temperature ran a lower course.

The second chart (5144) shows only the terminal portion of the temperature curve, inasmuch as the patient was admitted on the 20th day of his illness, after his temperature had practically reached normal. He had double bronchopneumonia with hemorrhagic lungs. The influenza bacillus alone was found in his lungs.

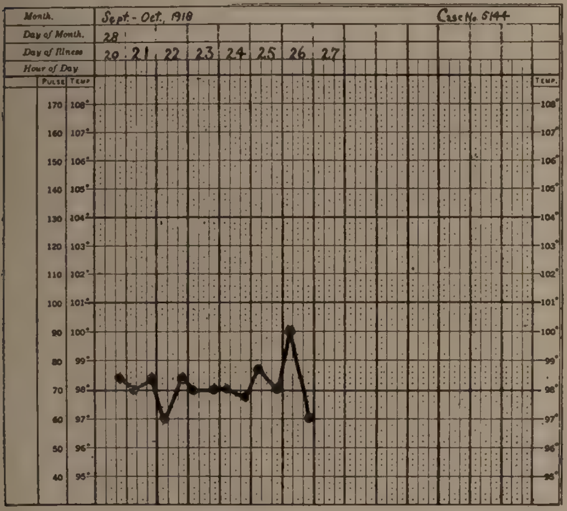

CHART NO. II. AUTOPSY SHOWED PURE CULTURE OF INFLUENZA BACILLUS.

The third chart (5430) is that of a patient admitted on the fourth day of his illness; he died on the eleventh day. His lungs showed a double pneumonia; the influenza bacillus only was found, and you will notice that he died after an apparent crisis.

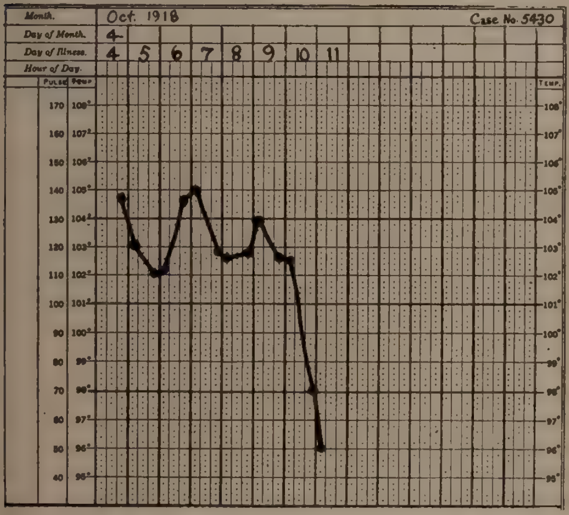

CHART NO. III. AUTOPSY SHOWED PURE CULTURE OF INFLUENZA BACILLUS.

Chart 4 (5023) is from a patient who was admitted on the seventh day of the disease and died on the tenth day with a hemorrhagic bronchopneumonia in both lungs. He showed slight general cyanosis. The influenza bacillus alone was found in his lungs.

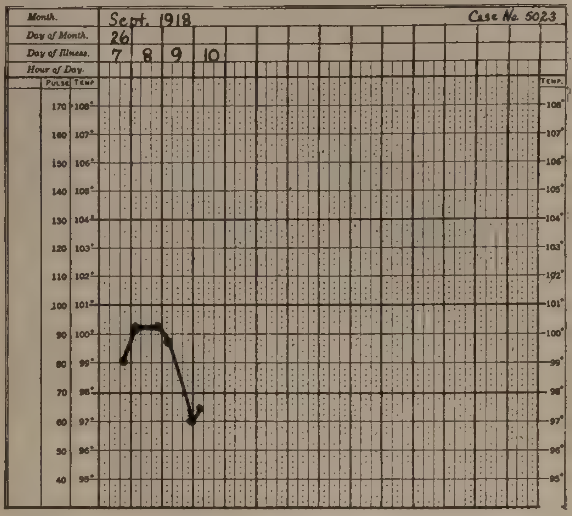

CHART NO. IV. AUTOPSY SHOWED PURE CULTURE OF INFLUENZA BACILLUS.

Chart 5 (5500) is from a patient admitted on the second day of the disease. He died on the tenth day with a double bronchopneumonia; the lungs were very hemorrhagic. Pneumococcus Type IV was the only organism found in his lungs. It will be noticed that his temperature shows a striking remission on the third day, which was followed by a progressive rise to 105.8° on the day preceding his death.

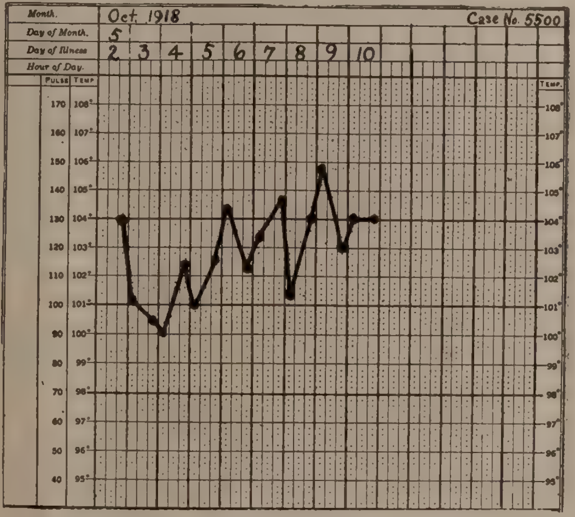

CHART NO. V. AUTOPSY SHOWED PURE CULTURE OF PNEUMOCOCCUS IV.

Chart 6 (4598) is from a patient who was admitted on the second day of the disease. He died on the eleventh day with a hemorrhagic pneumonia in both lungs. He was very cyanotic. Cultures from the lungs yielded only pneumococcus Type III. His temperature curve shows a striking remission on the third day, followed by a rise for five days, another remission and a final rise terminating in his death.

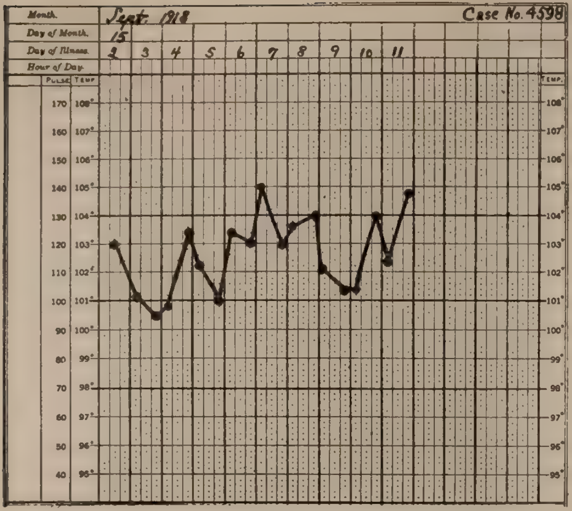

CHART NO. VI. AUTOPSY SHOWED PURE CULTURE OF PNEUMOCOCCUS III.

Chart 7 (4639) is from a patient admitted on the sixth day, who died on the ninth day with a hemorrhagic bronchopneumonia and cyanosis. The culture from his lungs showed only hemolytic streptococcus.

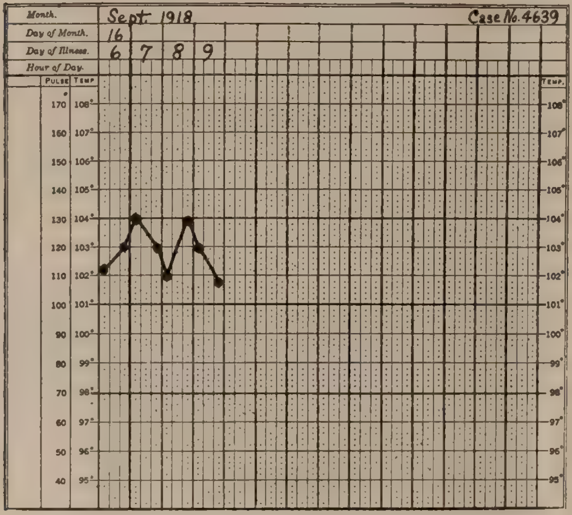

CHART NO. VII. AUTOPSY SHOWED PURE CULTURE OF STREPTOCOCCUS HEMOLYTICUS.

Chart 8 (4734) is from a patient admitted on the seventh day, who died on the eleventh day with a hemorrhagic bronchopneumonia, whose lungs yielded only a hemorrhagic streptococcus.

These charts of course do not present a sufficient mass of evidence to decide any question; and it will be hard to find a large number of charts from the beginning of the disease to the termination where a pure culture of any one organism was found after a careful bacteriological examination of the actual lesions of the disease. It does not seem, however, that there is anything very characteristic in the temperature curves that I show you, and we are forced to await further evidence before we can attempt to say that there is a characteristic curve for infection with any of these various organisms.

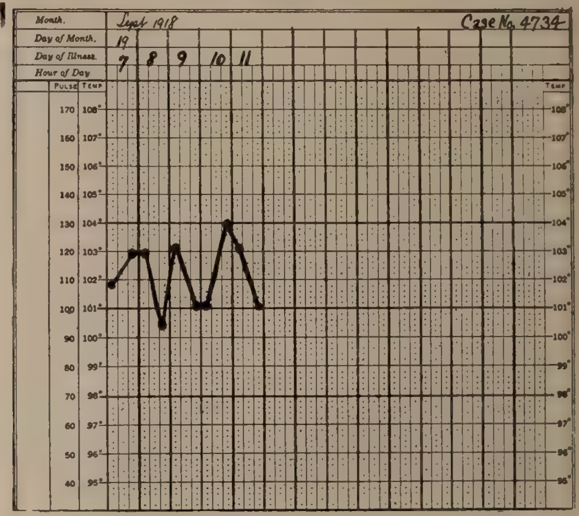

CHART NO. VIII. AUTOPSY SHOWED PURE CULTURE OF STREPTOCOCCUS HEMOLYTICUS.

Another group of cases showed chiefly abdominal symptoms. These are rather hard to explain. One such case was admitted to New York Hospital with fever and a good history of acute appendicitis. The abdomen was rigid and sensitive in the region of the appendix. Because she had a little cough and influenza was so prevalent the operation was delayed for a little time. Later she developed a double bronchopneumonia and recovered without surgical treatment. There were other cases who had both an operation and pneumonia to get over. Of course, we see cases suggesting appendicitis who turn out to be suffering from pneumonia in ordinary times, but we have seen rather more of them than is usual during the past few months. It is quite possible that this disease may attack the appendix as it undoubtedly does attack the colon.

Another patient was admitted to a hospital and was operated upon for acute cholecystitis. The gall-bladder contained no stone and was scarcely inflamed. The peritoneal cavity contained some serum in excess, from which, however, no cultures were made, and later the patient developed the usual type of double bronchopneumonia and died. These cases suggest that the cause of this disease, whatever it is, may attack the peritoneum also.

Another question that presents itself is, Are we confronted at the present time by a recrudescence of the epidemic of last fall? We are not in a position to name any organism as the unquestioned cause of the illness of last fall. We know that there was a good deal of bronchopneumonia, some lobar pneumonia, and much inflammation of mucous membranes everywhere, associated with a very serious illness of a startlingly high mortality; that this illness seemed to be accompanied in an unusual number of cases by tremendous congestion of all the organs that it attacked; that the patients were often very cyanotic; that they bled from the nose and throat, from the stomach, from the bowels, from the lungs, from the kidneys, for we have seen instances of bleeding from all of these organs. The cases that we are seeing now show catarrhal symptoms of the various mucous membranes; they show bronchopneumonia. There seem, perhaps, to be a larger percentage in whom we can find the pneumococcus and whose course is more apt to follow that than we expect with a pneumococcus pneumonia. The mortality is less than it was last fall, but I do not know how we can decide whether this is a recrudescence of a disease that is scarcely identified to the point of demonstration, or whether it is simply the customary recrudescence of diseases of the lungs and of the air passages, such as are met with every winter and spring.

In what I have said to you I fear that I have added nothing to your knowledge of the distressing conditions that have so appalled us since last summer. I have, however, tried to point out the difficulties of drawing conclusions, the questionable character of the ordinary evidence that we are able to assemble in connection with our clinical work, and to express the hope that we may all of us prefer a position of suspended judgment to one of premature conclusions that will have to be undermined by more study and more accurate work. When the opportunity for observing cases of this sort arises, we are unfortunately so overwhelmed by the immediate demands on our time and our strength that the quality of the observation and the completeness of our study are less satisfactory than is the case in normal times. We have, I think, all learned that even with the profusion of cases offered by an epidemic, the study and the practice of medicine still remains a most difficult thing, and that now, as centuries ago, "Life is short and the Art long; the occasion fleeting, experience fallacious, and judgment difficult."

THE MEASURE AND DEVELOPMENT OF NUTRITION IN CHILDHOOD.*

By GEORGE M. RETAN, M.D.,
SYRACUSE, N. Y.

DURING the past year the state of nutrition of our American children has occupied a prominent place in the thought of the medical profession. This is shown by the large amount of work done towards the correction of malnutrition both in the schoolroom and in clinics and by the increasing literature dealing with this subject.

The results of this work demonstrate a new responsibility of the physician, which is a more careful consideration of the nutrition of children. This would tend to correct a large percentage of malnutrition now existing. These cases of malnutrition should be corrected, for malnutrition in children reduces their resisting power to infection and retards their normal development.

The measure of nutrition is the best single indicator of a child's state of health. There is no other single observation that could be made on a group of children that would lend so much knowledge of their health as a series of weights over a period of time. This is especially true if these weights were compared with a normal standard.

The first step in considering a nutritional problem is to adopt a correct standard of measurement. This step is of vital importance. The first part of our paper deals with the study of this subject.

There are five possible factors that could be used as a basis of measurement. These are weight, height, age, sex and nationality. There are three relationships that should be considered. The relation of age to weight, the relation of age to height and the relation of height to weight. The bearing of sex and nationality on our problem will also be considered.

Until of recent date the standard used was the relation of age to weight. In a child, age is a measure of the time of growth. It does not necessarily constitute a measure of the rate of growth. Chart No. 1 gives a graphic representation of the relation of weight to age as a measure of nutrition. Weight is shown along the ordinate, each small square representing one pound.

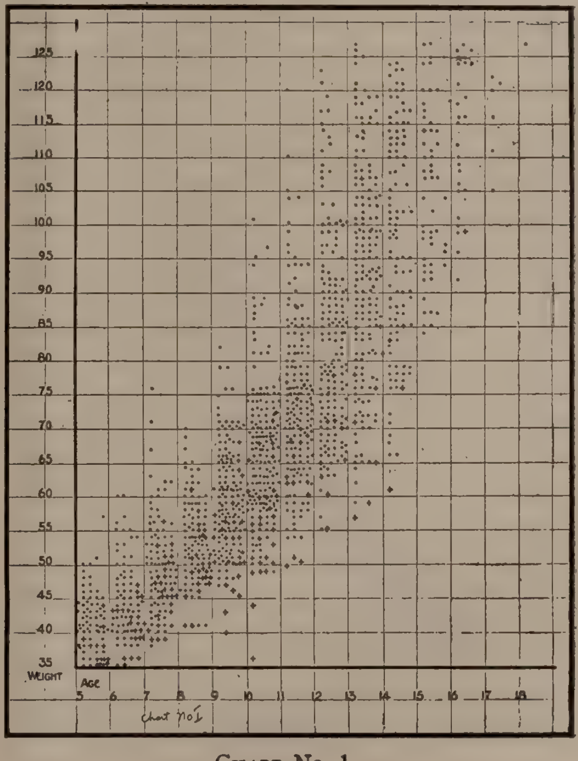

CHART No. 1.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 7, 1919.

Age is shown along the abscissa, each large square representing one year. Normally nourished children are represented by dots, badly nourished children are represented by crosses.

There are two striking truths brought out by the study of this chart. First, that there is a great variation in weight for any given age. Second, that the relation of age to weight does not separate the normally nourished children from the undernourished children. This is shown in the chart by the fact that many crosses are seen among the dots. This would prove that the standard based on the relation of age to weight as a measure of nutrition is not correct.

The relation of age to height cannot be used as a standard of the measure of nutrition. Height is a measure of the development of stature and as age measures the time of growth, their relationship would measure the rate of development in stature. It has naught to do with nutrition.

The relation of height to weight is the correct standard. It is plain that a child of a given weight would present a grade of nutrition in exact proportion to his height.

Most scales of nutrition have been based on average weights. Inasmuch as 20 per cent of all children have been found to be undernourished and but 2 per cent have been found to be overnourished, the average of all children would not be the average of normally nourished children. Furthermore, this method will give a concrete number as the normal weight of a given child, but there can be no concrete number for the normal weight, since normal weight is a variable and should be represented by a zone.

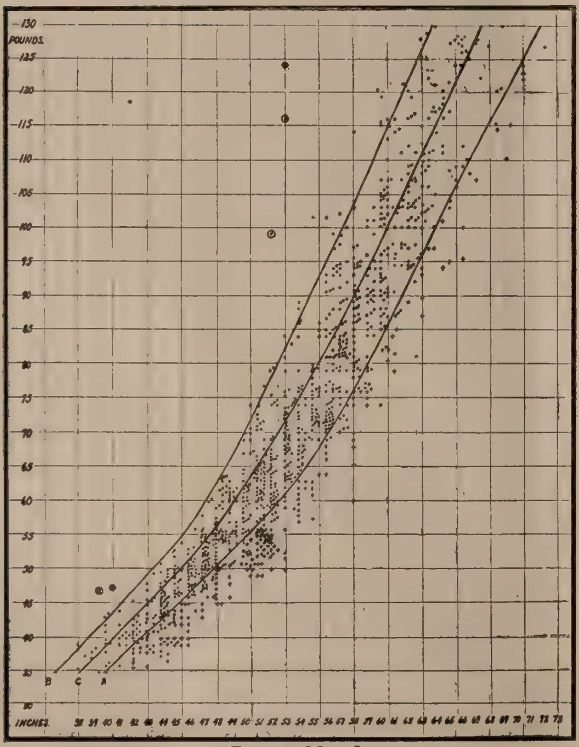

Chart No. 2.

Chart No. 2 was made during a physical examination of school children ranging between the ages of five and sixteen years. They were weighed and measured with their shoes on, but with the clothing removed from their chests. They were divided into three classes of nutrition and were placed on the chart in the following manner: badly nourished cases were represented by crosses, normally nourished cases by dots, while overnourished cases were represented by circles. Line A was then drawn along the upper border of the malnutrition cases and line B was drawn along the upper border of normally nourished cases. The zone between lines A and B is the zone of normal nutrition and the zone below line A is the zone of malnutrition. Line C was then drawn midway between lines A and B. Line C represents the average weight of normally nourished children. All children are thus arbitrarily placed in four zones of nutrition. The zone of overnourished children is above line B. The zone of excellently nourished children is above line C, since children in this zone are above the normal average. The zone of passably nourished children is below line C, since children in this zone are below the normal average. The zone of badly nourished children is below line A. In this chart there is seen no such diffuse occurrence of crosses among the dots as in Chart No. 1. On the contrary, the crosses appear in a definite group along the lower border of the dots.

Chart No. 3 gives the zones as formed in Chart No. 2. This chart can be used to measure nutrition. In measuring the nutrition of a given child one can place his weight and height on this chart and obtain a mental picture of his nutritional relationship. For example; let us take a child of fifty-three inches in height. If he weighs fifty-five pounds he would fall on a point six pounds below the line of malnutrition and seventeen pounds below the average weight of normal children. This makes his degree of malnutrition apparent. If he weighs seventy pounds he would closely approach the weight of an average normal child and if he weighs eighty pounds he would be eight pounds above the weight of the average normal child. If he weighs ninety pounds he would be seven pounds above the upper limit of normal nutrition and eighteen pounds above the weight of the average normal child.

In measuring children one must decide in what manner they will be dressed for observations. In individual cases it is best that the children be entirely undressed for measurement of weight and height. This would be the best method for private practice. However, working in schools and in some clinics this method would be out of the question. Sufficiently accurate observations can be made by removing coats, sweaters and blouses.

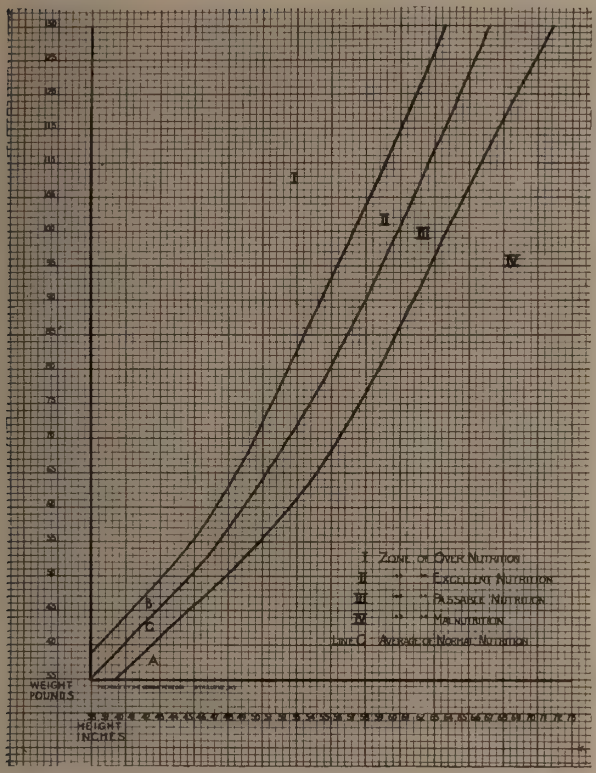

Chart No. 3.

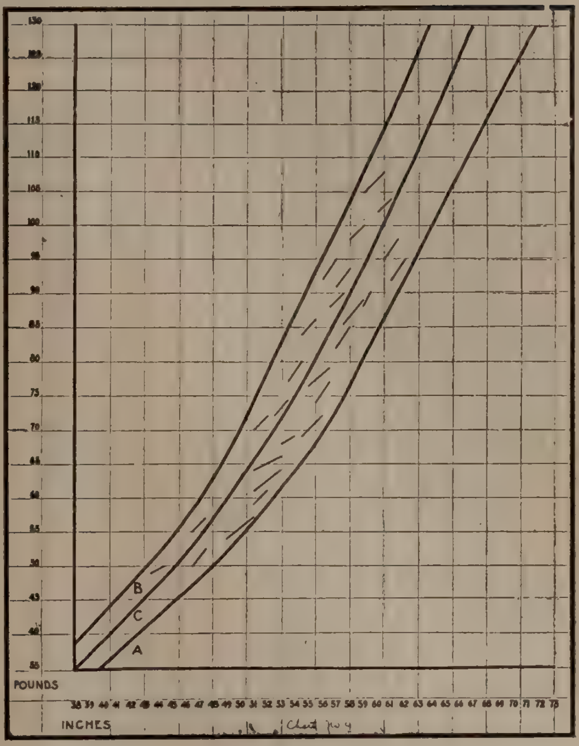

Chart No. 4.

Some observers also remove shoes. In using the relation of height to weight as a standard I have found that it is not necessary to remove shoes. The loss in height from the removal of the shoes compensates for the loss in weight from the shoes. Chart No. 4 shows a series of children weighed and measured both with and without shoes, the two observations on each child being connected by a line. The lower end of the line represents the weight and height without shoes. The upper end of the line represents the weight and height of the same child with shoes. You may observe that these lines are sufficiently parallel to the average normal weight line to make very little difference in the measure of the nutritional state of the child.

The factors of sex and nationality must be considered. Chart No. 5 gives a comparison of the nutrition of girls and boys. This chart was made from the scale of Boas and Burke. The boys are represented by a black line. The girls are represented by a broken line. You will observe that these lines run nearly together and cross in places, showing no constant variation. This would tend to prove that a separate scale of measurement is not necessary for each sex. Furthermore, it is to be borne in mind that the nutritional standard is represented by zones based on the relation of weight to height and not by fixed lines based upon averages.

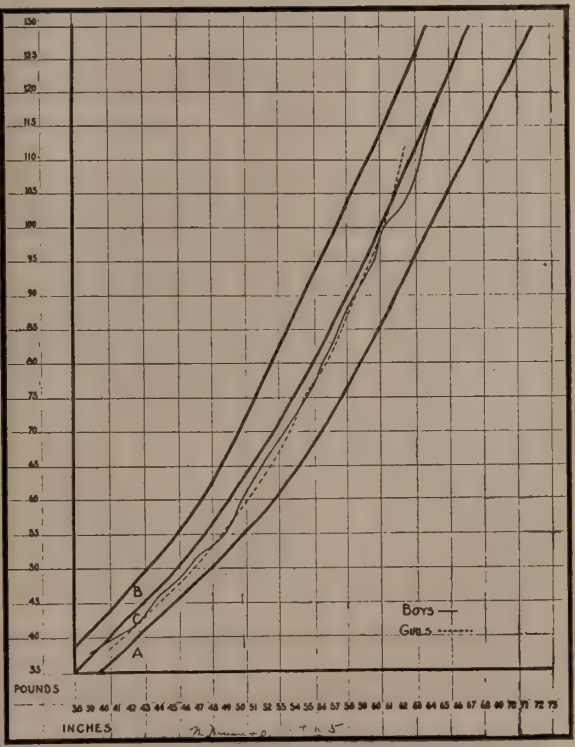

Chart No. 5.

It is obvious that nationality plays no rôle in the measure of nutrition when the nutritional standard is represented by zones based on the relation of weight to height.

Malnutrition should be considered in the same light as actual disease. Its cause should be determined and remedied.

The principal causes of malnutrition may be classified as:

A. Physical defects.

1. Adenoids,
2. Hypertrophied Tonsils,
3. Decayed Teeth,
4. Eye Strain.

B. Habits.

1. Food Habits,
    a. Coffee, Tea and Alcohol,
    b. Insufficient food,
    c. Candy between meals.
2. Lack of sufficient rest.

C. Hygiene.

1. Sleeping in congested, unventilated rooms.

D. Disease.

1. Any actual diseased condition as Tuberculosis, Syphilis, etc.

These causes of malnutrition suggest the proper procedure to follow in their correction. Each malnourished child should receive a careful physical examination, then any physical defect found which has a bearing on the case should be remedied.

The majority of all malnutrition cases are either caused by infected Tonsils and Adenoids or by faulty diet and often a combination of the two.

The result of tonsilectomy on nutrition is shown by the following data. This gives a summary of the weights of ninety-five children who have had their tonsils removed for at least one year. These children have lived under the same conditions following tonsilectomy and have received the same diet. Six pounds was used as an average yearly gain for basis of comparison. Sixty-eight cases or 71.5 per cent gained more than six pounds. Separating the cases into different rates of gain gives the following table:

Above 20 pounds	4 or 4.2 per cent,
Between 20 and 15 pounds	10 or 10.5 per cent,
Between 15 and 10 pounds	22 or 23.1 per cent,
Between 10 and 6 pounds	32 or 33.6 per cent,
Less than 6 pounds	27 or 28.5 per cent.

Three cases failed to gain during the year and two cases lost in weight. One of the two cases that lost was an active case of pulmonary tuberculosis.

We have made an investigation to determine the diet of 530 school children between the ages of five and twelve years. The diets were separated into three classes. First class; normally balanced diet of sufficient food value, 58 or 10.9 per cent. Second class; sufficient in food value, but not balanced, 245 or 46.3 per cent. Third class; insufficient in food value, 227 or 42.7 per cent. 315 or 54 per cent were in the habit of drinking coffee with their meals.

These data show that nearly half of our children receive insufficient food and that over half of our children are in the habit of drinking coffee. This demonstrates the importance of considering diet in relation to any nutritional problem.

It is beyond the scope of this paper to discuss the different methods of correcting malnutrition. Excellent methods have been elaborated for school and dispensary practice. These have been reported in detail in medical literature. Our references to them are appended to this paper.

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Emerson, Wm. R. P., *Am. J. Dis. Child,* 17:251, 1919.
Wilson, M. G., *Arch. Ped,* 36:37, 1919.
Smith, C. H., *Am. J. Dis. Child,* 15:373, 1918.

Correspondence

STATE DEPARTMENT OF HEALTH
ALBANY, N. Y.

Editor NEW YORK STATE JOURNAL OF MEDICINE.

Dear Doctor—I wish to advise you that the following mentioned localities are in need of physicians:

East Durham, Greene County. For further information write to Mr. Harry W. Tubbs, East Durham, N. Y.

Gilboa, Schoharie County. For further information write to Mr. Franklin Clapper, Gilboa, N. Y.

Savona, Steuben County. For further information write to Mr. G. W. Frisbie, Savona, N. Y.

Anything you can do in the matter will be very much appreciated.

Yours very truly,
B. R. RICKARDS,
Assistant to Deputy Commissioner.

The Medical Directory of New York, New Jersey and Connecticut

The Committee on Publication regret that, owing to the five weeks printers' strike, the publication of the Medical Directory of New York, New Jersey and Connecticut has been greatly delayed.

Work has now, however, been resumed, and it is hoped that the book will be completed and ready for delivery by the end of December.

Medical Society of the State of New York

SPECIAL MEETING OF THE HOUSE OF DELEGATES

A special meeting of the House of Delegates was held in the Ballroom of the Ten Eyck Hotel, Albany, on Saturday, November 22, 1919. The meeting was called to order at 2 P. M. by the President, Dr. Grant C. Madill, Ogdensburg.

The Acting Secretary, Dr. Edward Livingston Hunt, called the roll, and the following delegates responded: Arthur J. Bedell, Eugene E. Hinman, Henry L. K. Shaw, Chauncey R. Bowen, Harry Aranow, Cornelius J. Egan, Vincent S. Hayward, Samuel B. Rosenzweig, Edmund E. Specht, Nathan B. Van Etten, John E. Virden, Walter D. Weil, Frank M. Dyer, Edward Torrey, Vernon M. Griswold, J. William Morris, Frank C. Maxon, Charles J. Kelley, Robert W. Andrews, John A. Card, James E. Sadlier, Arthur G. Bennett, George F. Cott, F. Park Lewis, Harry R. Trick, Grover W. Wende, Charles R. Payne, William J. Kennedy, Robert Selden, Harry H. Halliwell, James F. McCaw, Elias H. Bartley, Raymond Clark, Robert E. Coughlin, Roger Durham, James W. Fleming, Russell S. Fowler, James C. Hancock, William A. Jewett, John A. Lee, Walter D. Ludlum, Sylvester J. McNamara, William Pfeiffer, Mary E. Potter, John J. Sheehey, F. Edward Jones, Nelson O. Brooks, Owen E. Jones, Wesley T. Mulligan, Edward G. Nugent, Seth M. Milliken, Theodore H. Allen, George Barrie, Henry W. Berg, Daniel S. Dougherty, Ten Eyck Elmendorf, William S. Gottheil, E. Eliot Harris, Ward B. Hoag, Frederick C. Keller, George W. Kosmak, J. Milton Mabbott, James Pedersen, Wendell C. Phillips, Alfred C. Prentice, Samuel J. Kopetzky, Henry S. Stark, Howard C. Taylor, Eden V. Delphey, Orrin S. Wightman, John Van Doren Young, Luther M. Jayne, Morris J. Davies, George M. Fisher, Thomas Z. Jones, Frederick H. Flaherty, Albert E. Larkin, Edward J. Wynkoop, William W. Skinner, Walter H. Kidder, Joseph H. Bogart, Thomas C. Chalmers, L. Howard Moss, Frank P. Hatfield, Joseph N. Wickham, Martin M. Kittell, William J. Malcolm, George A. Newton, Melville D. Dickinson, Christopher J. Patterson, Charles R. Kingsley, Jr., E. Warren Presley, John C. Dingman, W. Grant Cooper, William B. Hanbidge, G. Scott Towne, Henry G. Hughes, Frederick C. Reed, Herbert J. Wright, Frank Overton, William H. Ross, Luther C. Payne, Frank L. Eastman, Zenas V. D. Orton, Dwight F. Johnson, William H. Cantle, Elton G. Littell, Giovanni Stella, Edward F. Briggs, James E. Slaught.

The following officers and chairmen of committees were present:—Grant C. Madill, Dwight H. Murray, W. Meddaugh Dunning, George W. Cottis, Edward Livingston Hunt, J. Richard Kevin, Henry Lyle Winter, Joshua M. Van Cott, Charles H. Peck, Frederic E. Sondern, Joseph B. Hulett, Luther Emerick, T. Avery Rogers, G. Massillon Lewis, Albert T. Lytle.

Before proceeding with the business for which the meeting was called, President Madill said: That the meeting was saddened by the death of Dr. Crandall, who for three years had served as Secretary of this organization. Dr. Crandall had been ill for several weeks, and while his death was not unexpected, when the announcement of his death was made, it was a great shock to his numerous friends throughout the State, who had no knowledge whatever of his illness.

Since I became President of the Medical Society of the State of New York, I have been very closely associated with Dr. Crandall, and I admired him for his devotion to the office of Secretary and for his implicit faith and confidence in the State Medical Society. He was devoted to the work of the State Society, worked faithfully and hard, for its interests, both as Secretary and as acting Editor of the State Journal. Regardless of self he always endeavored to do what was right, and no physician, man or officer could possibly have been more faithful, or have higher ideals in the practice of medicine, than Dr. Crandall. We will miss him very deeply.

Dr. Madill then stated that the meeting was called in compliance with a resolution passed at the annual meeting in May, and all requirements for calling a special meeting of the House of Delegates have been complied with.

Dr. Daniel S. Dougherty: Before proceeding with the transaction of any business, I move that all speeches, except those of the chairmen presenting their reports, be limited to three minutes.

Seconded and carried.

The President: Is the Chairman of the Committee appointed to study the question of Compulsory Health Insurance ready to present the report at this time?

Dr. Harvey R. Gaylord, Chairman of the Committee: I desire to hand in the report of the Committee, which is signed by seventeen members of the committee of nineteen.

The President: You have, gentlemen, a copy of the report before you. What is your pleasure in regard to it?

Dr. Gaylord: I move that the reading of this report be dispensed with in view of the fact that all members of the House of Delegates have copies of it in their hands.

Seconded and carried.

Dr. Alfred C. Prentice: I move that the House of Delegates of the Medical Society of the State of New York now resolve itself into a committee of the whole for the discussion of the committee's report. Seconded. (There were cries of no! no!)

The President put the question to a vote and declared that the noes had it.

The President: What is your further pleasure?

It was moved that the report of the committee be adopted as a whole. Seconded by Dr. Wendell C. Phillips.

After remarks by Drs. Gottheil, Delphey, Harris, Stark and Kopetzky, the motion to adopt was put to a vote and carried unanimously.

The report of the committee is as follows:

At a meeting of the House of delegates of the Medical Society of the State of New York, held in Syracuse, May 5th, 1919, in compliance with the recommendations of President Halsted,

> "That before taking final action, the subject of Compulsory Health Insurance be referred by this Body to a committee to study it with special Reference to its Relationship to the Medical Profession, and report back to a special meeting of the House of Delegates to be called in the Fall before the next meeting of the Legislature,"

the following resolution was passed by the House of Delegates:

> "In regard to that portion of the President's report having to do with the Donohue-Davenport Bill, we approve and advice the adoption of the recommendation made in supplementary report to the end that there be appointed a special committee named by the President to study the subject and report back to a special meeting of the House of Delegates, to be called this autumn before the next meeting of the Legislature."

The following is the Committee appointed by President Thomas H. Halsted:

Harvey R. Gaylord, Chairman, Buffalo. Grant C. Madill, Incoming President, State Society, Ogdensburg. Thomas H. Halsted, Retiring President, Syracuse. Joseph B. Hulett, President, First District Branch, Middletown. Frederick C. Holden, President, Second District

Branch. Brooklyn. Luther Emerick, President, Third District Branch, Saugerties. Thomas A. Rogers, President, Fourth District Branch, Plattsburg. G. Massillon Lewis, President, Fifth District Branch, Vernon. R. Paul Higgins, President, Sixth District Branch, Cortland. John H. Pratt, President, Seventh District Branch, Manchester. Albert T. Lytle, President, Eighth District Branch, Buffalo. J. Richard Kevin, Chairman, Committee on Legislation, Brooklyn. Henry L. Winter, Chairman, Committee on Medical Economics, Cornwall. Arthur W. Booth, Member, State Board of Medical Examiners, Elmira. George W. Kosmak, Chairman, Committee on Legislation, Medical Society, County of New York, New York. John A. Lee, Chairman, Committee on Legislation, Medical Society, County of Kings, Brooklyn. James F. Rooney, Chairman, Committee on Legislation, Medical Society, County of Albany, Albany. Walter H. Kidder, Secretary, Medical Society, County of Oswego, Oswego.

The incoming President, Grant C. Madill, added to the Committee Sigismund S. Goldwater, Medical Director, Mt. Sinai Hospital, New York.

Your Committee met at Atlantic City on June 10th, 11th and 12th; at Brooklyn on July 26th; at Buffalo on September 3d; and at Utica on November 9th; and numerous meetings of sub-committees were also held. The members of the Committee have given good attendance although two members have not attended any meeting.

Your Committee would like to offer the following brief résumé of the subject of its study before stating its recommendations:

The essential components of all compulsory health insurance schemes are two: first, the provision of a cash indemnity during a relatively brief period of incapacity to labor due to illness; secondly, the provision to the insured and their dependents during a determinate time of so called medical benefits which comprise medical, dental and nursing attendance, hospital and sanatorium accommodations, maternity attendance, drugs and all necessary medical and surgical supplies.

The proponents of this legislation rest their demand for the institution of this scheme in America upon two main allegations: first, that a very large amount of poverty is due to illness causing consequent unemployment and loss of income; secondly, that a vast amount of the population receives inadequate and insufficient medical attendance, that is, that medical attendance is grossly deficient both as to quantity and quality.

With the general features of the measures proposed for the legislative enactment of the compulsory health insurance scheme in this State your Committee will deal only in the briefest manner; the matter is familiar to you. It is proposed to establish an administrative machinery radiating downward from a division of the State Industrial Commission composed of a certain number of commissioners appointed by the Governor who in turn appoint a chief of the bureau of health insurance. Subordinate to the Commission and acting under regulations made by the Commission function the boards of directors of the local funds composed of three members elected by the employer members of the local fund, three elected by the employees and one additional elected by these six. All the affairs of the funds are administered locally by these boards of directors. Each local fund employs a medical officer who is permitted to practice and who is practically the medical supervisor of the administration of the benefits of the act. The medical profession is not represented upon any executive body under the proposed law, but is permitted to function solely through advisory committees, local and State. Its sole statutory representative has an administrative, not an executive function.

After consideration of the evidence put forward by the proponents of this legislation in support of their statement that a large proportion of the poor have been impoverished through unemployment caused by illness, your Committee finds that none of this evidence is unimpugnable and that it rests upon largely *a priori* reasoning. The preponderance of evidence is against the fact that any considerable amount of impoverishment is caused by illness; moreover, in those cases where impoverishment is caused by illness, it is due to the long enduring disability preceding death occurring in the chronic diseases especially tuberculosis, chronic heart disease, cancer, chronic joint infections, renal and vascular disease which cause a disability long exceeding the period of twenty-six weeks during which the insured is entitled to benefits under the scheme. The statistics of the Labor Bureau of New York State show that in the main disability from all causes including accident, injury and illness is the source of, on the average, only 5.7% of unemployment, about the same amount as that caused by weather conditions (5.6%) or a little less than half that caused by labor disputes (10.6%), or one-thirteenth that due to lack of work (74.6%). A survey entitled "Poverty in Baltimore and Its Causes; Study of Social Statistics in the City of Baltimore," by the Alliance of Charitable and Social Agencies, McCoy Hall, Baltimore, Md., November 15, 1918, gives strong evidence of the small part illness plays in the cause of poverty; moreover, it evidences strikingly the fact heretofore stated as to the relationship of prolonged disability not covered in any scheme for health insurance to the relatively few cases of impoverishment due to sickness. Your Committee would find, therefore, that short illnesses causing ephemeral disability bear no relation to poverty; that where impoverishment is caused by illness it is in all instances due to long continued disability; and that illness is but a very minor cause of unemployment as compared even to the conditions of the weather or labor disputes.

Your Committee is unable to find any available evidence that will bear inspection proving that in the main, medical attendance in this State is grossly deficient in quantity or grossly defective in quality. If these facts were true it is unable to satisfy itself that the people of this State would receive a larger and closer degree of medical attention where one physician may care for either two thousand or more patients as permitted under this scheme than they now receive where the proportion of physicians to population is about as one is to seven hundred and eighty. Moreover, your Committee is satisfied that the quality of medical attention would no more be benefited in the United States than it has in Germany, Austria and Great Britain, by the conversion of medical practice from its present plan into an enormous scheme wherein the practitioner would be employed from year to year under contract, and in the final analysis subject to lay dictation as to means and methods of practice.

Your Committee feels very strongly that the inquisitorial powers which would be conferred upon the State Industrial Commission and its agents, and upon the local boards of directors must be considered in its effect upon the public health, and especially as to the rôle it might assume in submerging and nullifying the activities of the present State Department of Health which has played so large a part in the reduction of morbidity and mortality by means of preventive, not palliative, medicine.

There is no uncertainty about the evidence that the relative morbidity rate, mortality rate, infant mortality rate and maternal mortality rate, has been much more materially reduced in the United States during the past twenty years than it has been in Germany and Austria where compulsory health insurance not alone, but the whole scheme, including invalidity and unemployment insurance and old age pensions, have been in force. It can, therefore, be seen that compulsory health insurance as such plays a very small part in the reduction of length and severity of illness and that on the whole it has been of extremely little value, medically, in those countries; while it has been the cause of a profound deterioration in medical service and medical morale. Even in England where it has been in operation for a comparatively short time it has proven so defective and ineffective for the purposes for which it was instituted that it is now proposed to inaugurate the plan of State medicine to supplant it.

Your Committee, therefore, finds:

First: There is no necessity for the institution of a scheme covering the major portion of the population of the State providing for the institution of contract medical practice on a colossal scale in order to furnish medical attendance and other services.

Second: In those countries where this scheme has been in operation for many years, it has caused a deterioration in medical morale and medical service and that its effect in this State would be the same, that is, a lessening in the quality of medical service.

Third: In comparison with those countries where this scheme has been in operation the United States shows a more marked reduction in mortality rate, both general and as affecting maternal and infantile mortality rate. Apparently the morbidity rate under the scheme has doubled instead of being diminished in Germany and Austria since the institution of the social insurance plan.

Fourth: There is danger of the scheme gradually undermining the functions so extremely valuable to the community at present subserved by the State Department of Health.

Fifth: Owing to the paucity of accurate and unimpeachable data collected by means of an unbiased investigation, your Committee recommends that the Legislature of 1920 be requested to appropriate a sufficient sum of money for the use of the Health Department, and such other departments in association with it, as it requires, for the purpose of making a survey of the State of New York to determine the amount and character of illness in its economical relation to the commonwealth.

Sixth: If additional legislation is to be enacted, it should provide for a greater development of existing agencies for preventive medicine, together with the extension on a large scale of the present county and municipal functions for both preventive and remedial medicine, and it should make further provision for the inauguration of more widely extended utilization of the present institutional clinical facilities for the diagnosis and treatment of disease, in order to facilitate the access of the entire population of the State to modern methods in the practice of medicine.

Your Committee, therefore, recommends that the House of Delegates, and, through them, the Medical Society of the State of New York, unqualifiedly oppose the enactment by the Legislature of the State of New York of any law instituting a system of compulsory insurance against sickness because of its menace to the public health of the State.

Harvey R. Gaylord
Grant C. Madill
Thomas H. Halsted
Joseph B. Hulett
Frederick C. Holden
Luther Emerick
R. Paul Higgins
John H. Pratt
Albert T. Lytle

J. Richard Kevin
Henry L. Winter
T. Avery Rogers
G. Massillon Lewis
Arthur W. Booth
John A. Lee
James F. Rooney
Walter H. Kidder

A minority report by Dr. Sigismund S. Goldwater, was prepared, distributed among the delegates, but was not read, and no action was taken on it.

This report is as follows:

MINORITY REPORT

To the House of Delegates of the Medical Society of the State of New York

The undersigned is unable to agree with the majority report of the *committee to study the subject of compulsory health insurance with special reference to its relationship to the medical profession.*

For the sake of brevity and directness, the essential matter of the present report is presented in the form of a series of resolutions, setting forth certain guiding principles which were formulated after a careful study of the subject assigned to the Committee. In what follows, members of the Committee will recognize principles which were adopted, nearly all of them without a single dissenting vote, at a meeting of the Committee held in Brooklyn on Saturday, July 26th, 1919, fifteen members of the Committee being present and voting.

1. Unless the great mass of the population, including workers and their dependents, are brought within the scope of the proposed Health Insurance law, no material improvement can be effected in the organization of the medical profession, nor can the benefits of medical science be more widely and satisfactorily applied than by means now available. This Committee, therefore, holds that the insurance funds must furnish surgical, medical and nursing attendance, and the prescribed treatment, not only to insured persons, but to the dependent members of their families.

2. Believing that the rural population now receives inadequate medical attention, we recommend that agricultural laborers be definitely included among the compulsory insured.

3. Domestic servants should be included among the insured.

4. No health insurance plan can be regarded as satisfactory which does not make available for the insured persons an improved grade of medical service, including the services of competent consultants and specialists; specific provision should be made for consultants, and consultant services should be organized in some form of group diagnostic clinics.

5. Hospital maintenance should be distinguished from medical attendance in hospitals; that is, the insurance firms should not be permitted to make inclusive arrangements with hospitals for maintenance plus medical services, but hospital maintenance and medical service in hospitals should be treated as separate items.

6. It is essential that any health insurance bill should provide for payment for professional services in proportion to the service rendered.

7. The capitation system of payment is opposed.

8. The employment, by funds operating under any health insurance law, of attending physicians or surgeons on salary is opposed; there should be a single system and principle of payment applicable to all insured persons, whatever the character or kind of fund in which the insured persons may happen to be insured.

9. The health insurance bills heretofore presented to the legislature have failed to provide for such an organization of the medical profession as would make the voice of the profession effective in negotiating rates with the funds; in the opinion of the Committee, the most promising form of organization for this purpose is one in which the whole body of legally qualified practitioners in the State would have representation and voice.

10. Provision should be made for dental, nursing and laboratory service for the insured and for the dependent members of their families.

11. In making provision for laboratory and research work insurance funds should deal with Health Departments as far as possible.

12. Free choice among all legally qualified physicians

and surgeons practicing in the State, should be granted to the insured.

13. Physicians practicing under any health insurance law should have the privilege of refusing to care for an insured person.

14. Rates of compensation for medical services should be readjusted at intervals not greater than twelve months.

15. The participation of commercial or profit-making insurance companies in health insurance under any State health insurance law is opposed.

16. Funds should provide maternity care for insured women and for the wives of insured men.

17. Fees for obstetric services should not be fixed by law.

18. The use of the word "panel" to describe physicians rendering service under a health insurance law, thereby distinguishing and segregating certain practitioners or groups of practitioners is objectionable; in place of the word "panel" there should be some other appropriate designation for the group of reputable and qualified physicians who may elect to practice under the law.

19. Except with special consent of the State Insurance Commission, no physician in general practice should at any time undertake the care or treatment of more than 500 insured persons with the dependent members of their families, unless it can be shown that there is not a sufficient number of practioners in the district to provide one physician for each 500 families.

20. For the purpose of facilitating the careful and deliberate organization of medical practice under any health insurance law, a period of not less than 18 months should be permitted to elapse between the passing of the act and the time of its enforcement.

21. No medical officer employed by a fund for the purpose of determining sick benefit allowances should be permitted to practice medicine in any capacity under the law.

22. The qualifications of the medical officers of the funds should be prescribed by the State Civil Service Commission.

23. Two additional State Industrial Commissioners, both reputable physicians, should be appointed for the purpose of administering any health insurance law.

24. The Board of Directors of the several funds should consist of equal numbers representing the employers and the employees, and at least one additional director who should be a physician, and who should be chosen by a majority of the directors.

25. There should be in all districts a medical office building to serve as a center where general practitioners and the specialists engaged in the treatment of ambulatory (insured) patients can do their work; these buildings should contain the proposed diagnostic clinics.

26. It is proper that the State contribute a fixed percentage of the total cost of administering the proposed compulsory health insurance law.

The undersigned believes that the demand for the distribution of the burdens arising from sickness cannot and should not be suppressed and that the demand for a wider application of the benefits of medical science is justified, and favors carefully considered legislation with these objects in view.

It is believed that the medical profession can perform a more valuable public service by earnestly assisting in framing a sound health insurance law than by merely opposing the enactment of proposed measures which are not satisfactory.

The adoption by the House of Delegates of the above principles, to which 15 members of the Committee, on July 28th, 1919, gave their assent, is respectfully suggested as a measure in keeping with the best traditions of the medical profession.

Respectfully submitted,
S. S. Goldwater, M.D.
New York, November 16, 1919.

APPENDIX: COMMENTS ON MAJORITY REPORT

The instructions of the committee appointed to study the question of compulsory health insurance were "to study the subject of health insurance with special reference to its relationship to the medical profession and to report back to a special meeting of the House of Delegates." Although the majority report does not strictly confine itself to the assigned topic, it seems proper here to follow the general direction of that report.

According to the majority report,

> The essential components of all compulsory health insurance schemes are two, viz:—the provision of a cash indemnity during a relatively brief period of incapacity to labor due to illness; secondly, the provision to the insured and their dependents during a determinate time, of so-called medical benefits which comprise medical, dental and nursing attendance, hospital and sanatorium accomodations, maternity attendance, drugs and all necessary medical and surgical supplies.
>
> "The proponents of this legislation" (i. e., compulsory health insurance legislation), says the majority report, rest their demand for the institution of this scheme in America upon two main allegations: first, that a very large amount of poverty is due to illness causing consequent unemployment and loss of income; secondly, that a vast amount of the population receives inadequate and insufficient medical attendance, that is, that medical attendance is grossly deficient both as to quantity and quality.

The majority report in discussing the relation between sickness and poverty makes the sweeping statement that: "The preponderance of evidence is against the fact that any considerable amount of impoverishment is caused by illness," and refers to a single local survey in Baltimore. As to the relation of disease to poverty, in New York State, the following actual experience of organizations engaged in the relief of poverty in this state is offered in evidence:

> In New York the Charity Organization Society stated in 1916 that 37 per cent of the families assisted by it were dependent because their wage earners were disabled by sickness.
>
> The Association for Relieving the Condition of the Poor states in its report for 1918 that, "It is increasingly being realized that at the root of most necessities for relief is a health condition, or more accurately a lack of health condition."
>
> The Buffalo Charity Organization Society reports that "sickness is more serious in our work for the poor han anything else." Numerically, it is the most important cause for relief. Relief organizations in Utica and other cities of the State duplicate this experience.
>
> The New York State Board of Charities states in its report for 1918 that, "A study of the causes of dependency reveals the fact that much of it is due to sickness. It has been estimated that the sickness of workingmen, with the consequent expense of medical treatment and loss of pay, is responsible for more than six times the amount of dependency caused by industrial accidents.........A large amount of the funds contributed by private charities for the care of families in their homes is made necessary because of sickness. Studies of charitable work have made the proportion more than 50 per cent."

The official commissions appointed to investigate health insurance which have gone into the matter most carefully have reported similar conditions in their States after official investigation—such as the majority urges should be made in order to establish these and other facts.

The majority's statement that "illness is but a very minor cause of unemployment as compared even to the conditions of the weather or labor disputes" tells rather heavily against labor disputes and the weather, but can hardly be considered seriously as an argument against compulsory health insurance.

The argument that "where impoverishment is caused by illness, it is due to long enduring disability" may be advanced logically by those who desire more liberal insurance features than have generally been suggested by the proponents of compulsory health insurance who recommend that cash benefits should be paid for a period not greater than twenty-six weeks in any one year. Such an argument has, however, no weight against the principle of distributing the burdens that spring from illness.

The majority states in its report of November that it has been "unable to find any available evidence that will bear inspection proving that, in the main, medical attendance in this State is grossly deficient in quantity or grossly defective in quality." The majority continues;

> If these facts were true, it is unable to satisfy itself that the people of this State would receive a larger and closer degree of medical attendance where one physician may care for either two thousand or more patients as permitted under the scheme than they now receive where the proportion of physicians to population is about as one is to seven hundred and eighty.

But on July 26, the committee adopted the following resolutions:

> Unless the great mass of the population including workers and their dependents are brought within the scope of the proposed health insurance law, no material improvement can be effected in the organization of the medical profession, nor can the benefits of medical science be more widely and satisfactorily applied than by means now available. This committee therefore holds that the insurance fund must furnish surgical, medical and nursing attendance and the prescribed treatment not only to insured persons but to the dependent members of their families.
>
> Believing that the rural population now receives inadequate medical attention, we recommend that agricultural laborers be definitely included among the compulsorily insured.

In support of the inadequate medical care mentioned the second resolution of last July, the data gathered by the Committee on Social Insurance of the American Medical Association and by State authorities may be cited. This investigation found that while in the Borough of Manhattan there were 418 persons for each physician, in upstate industrial communities such as Schenectady there were 694 persons to one physician and in centers having a population of less than 2,500 persons, despite the greater difficulty of handling large practices, there were 783 persons to each physician. The reports of the New York State Board of Charities show that of 189 dispensaries in the State, 135 are located in New York City and that over 90 per cent of the treatments given are in New York City. Hospitals show a similar concentration. Of the 186 hospitals in the State which receive public funds and which report to the State Board of Charities, 110 or 59.1 per cent are in New York City. But of the patients treated in these New York State hospitals, 78.1 per cent were cared for in the hospitals of New York City during nine months of 1916. Charity treatment from the dispensaries of New York City is received by approximately 20 per cent of the city's population, according to the findings of the Committee on Social Insurance of the American Medical Association. The Committee also found that 37.5 per cent of the city's physicians worked in these dispensaries, usually without remuneration. Available testimony showing the inadequacy of a large part of the work done in dispensaries. is too voluminous to be introduced here. It is an extension of this demoralizing system, necessary as it is at the present time, that the committee recommends as an alternative to health insurance.

The proportion of physicians to population of this State is approximately one to 780 according to the majority report and one to 640 according to statistics compiled from the Medical Directory by the Social Committee of the American Medical Association. Regardless of this discrepancy, medical service in New York State is very unevenly distributed, as the above figures indicate. Medical organizations and committees have repeatedly demanded that in any scheme of compulsory health insurance, free choice of physicians should be allowed; but again and again it has been pointed out that free choice without any limitation of number opens up the danger of concentrating a large proportion of the work to be done in the hands of so few men that the work undertaken by them will not be well done, and furthermore, that a few aggressive practitioners might profit unduly by the opportunities created by the system. The committee itself on July 26, adopted a resolution urging such a limitation as the majority now criticizes. Because of such objection there was introduced into the Davenport bill a provision limiting the number of individuals who might be cared for during the year by any one physician practicing under the act, but the provision was subsequently removed because of the opposition of the medical profession. The majority's comments on this phase of the question are most misleading, since they imply that no physician today undertakes the maximum service that might be undertaken under the suggested limitation in the proposed health insurance law. There are physicians today who have on their books the names of more than three times the average number of patients treated by each physician in the State. Among 2,000 insured persons (workers and dependents included) there would ordinarily at any one time be about 40 persons incapacitated; but there are physicians who today see 40 or more persons daily in their offices alone, and who may have under observation at any one time 200 sick, representing say 4,000 of the population. With unlimited free choice of physicians under health insurance, patients would be no worse off than they are today; with free choice of physicians plus a reasonable number limitation, the patients' chances of obtaining adequate medical service obviously would be better than they are today.

The majority expresses an opinion that:

> the quality of medical attention would no more be benefited in the United States than it has in Germany, Austria, and Great Britain, by the conversion of medical practice from its present plan into an enormous scheme where the practitioner would be employed from year to year under contract, and in the final analysis subject to lay dictation as to means and methods of practice.

There is no reason why a compulsory health insurance law in this country should follow, so far as medical service or administrative methods are concerned, the laws of any other country. The possibility of avoiding errors into which foreign legislators and administrators have fallen, is open to us. Indeed, the precise way in which such errors can and should be avoided is indicated in the twenty-five resolutions adopted by the committee on July 26, 1919. Legislation framed upon these lines would be a distinctly American product, departing radically in its medical service features, for example, from the English law. While the English law is defective from the American point of view, the testimony submitted to the committee by Margaret Bondfield, delegate from the British Trades Union Congress to the American Federation of Labor Convention, brought out the fact that health insurance was improving the health of the British people because for the first time many could afford to take care of their health. She said that as early as 1914 an official British investigating commission found that as a result of the rest obtained under the act, certain cases had attained better health than they had known in years.

Contrary to the statement of the majority that the British act has proven so defective that it is proposed to inaugurate a plan of State medicine to supplant it, Miss Bondfield presented evidence to the committee showing that in 1916 the Conference of Local Medical and Panel Committees (consisting of the representatives of doctors engaged in health insurance practice) affirmed that State medical service would meet with their strongest opposition. She also stated that in 1917 the Insurance Acts Committee of the British Medical Association also reported a very general preference for an improved panel system rather than for State medical service. The committee moreover recommended, said Miss Bondfield, that medical care under the health insurance act be extended to include hospital care, consultant and specialist service and nursing and that these as well as the limited benefit provided under the original act be extended to the dependents of insured wage earners. This recommendation seems to have been due, Miss Bondfield pointed out, to the realization among the leaders of the profession that the alternative to such an extension was State medical service. Recent publications report conferences upon these extensions of medical benefit between the Insurance Acts Committee of the British Medical Association and the insurance authorities.

Miss Bondfield also specifically brought to the committee's attention the following conclusion of the Insurance Acts Committee of the British Medical Association reached after circulating questionnaires among the profession, that:

> The degree of unanimity so far disclosed is somewhat remarkable. On a subject which five years ago was the most highly controversial that had ever been before the medical profession, and which still in some places, and everywhere in some of its aspects, excites argument, it is found (1) that many matters which at the beginning of the controversy gave rise to most apprehension have assumed a position of quite minor importance; (2) that the general system by which the State provides medical advice and treatment under the insurance scheme is in the main approved, and that criticisms have a tendency to concentrate upon a comparatively few points......; (3) that there is a large body of opinion in favor of the extension of the health insurance system both to kinds of treatment not at present provided for and to classes of persons at present excluded therefrom.
>
> The statement that the majority feels very strongly that the inquisitorial powers which would be conferred upon the State Industrial Commission and its agents, and upon the local boards of directors must be considered in its effect upon the public health, and especially as to the rôle it might assume in submerging and nullifying the activities of the present State Department of Health which has played so large a part in the reduction of morbidity and mortality by means of preventive, not palliative, medicine,

can only be characterized as misleading. The majority does not undertake to show that compulsory health insurance requires "that inquisitorial powers be conferred upon the State Industrial Commission or its agents." The principal functions of the State Industrial Commission (if that body were in fact entrusted with the administration of a compulsory health insurance law, though such a law might easily be drafted without reference to the State Industrial Commission) would be to provide for the payment of cash benefits to the sick during periods of unemployment due to disability caused by sickness and to provide necessary medical care. The claim that the performance of these simple functions would "nullify the activities of the State Department of Health" is utterly unreasonable!

Moreover, the actual experience of Great Britain during seven years' operation is directly to the contrary. In a survey of the field of public health activities in Great Britain, the Ministry of Reconstruction reported in 1919 that:

> The practical administration of this novel provision immediately threw into strong relief the somewhat dehumanised characteristics of the public health system, together with the narrowness of its limitations and the inadequacy of its administrative provision. In 1914 Mr. Lloyd George pointed out that "the Insurance Act has done more than any number of Commissions to locate, to define, and to classify the problems of public health. I will not say it has revealed, but it has given prominence to one very striking fact—that an immense number of men and women, through that lack of vitality and stamina which comes from unhealthy conditions and surroundings, live lives that are a prolonged struggle against debility and disease." The attention thus drawn to these conditions not only stimulated provision for the direct alleviation of existing suffering, but also encouraged the rediscovery, as it were, following the course of evolution of medical science, of a humaner principle of prevention, as the means by which the sufferings of the individual could best be relieved or averted.
>
> In another general respect the Insurance Act entirely altered the previous position. It created a new body of organized public opinion, with a financial interest in the improvement of the national health.

SUMMARY

The evidence submitted above, which the majority has ignored, shows conclusively that sickness plays a most important rôle in compelling persons to seek charity. The Committee called attention to the inadequacy of medical care in rural districts in its July resolutions; to its inadequacy in New York City I can personally testify. To overcome existing shortcomings in medical practice, the Committee formulated and adopted last July a constructive program for the organization of medical care under health insurance. That program constitutes the substance of the present minority report.

S. S. Goldwater.

The President: There is one other question to be brought before the House of Delegates at this special meeting, and that is the establishment of a Bureau of Legislative Information, which was referred to a special committee to report at this time. I will ask the chairman of that committee, Dr. Flaherty, if he is ready to report.

Dr. Frederick H. Flaherty presented the following report:

The joint committee appointed to report to the House of Delegates relative to the establishment of a Bureau of Legislative Information have examined the report of the special committee and the report of Dr. Rooney submitted at the last regular meeting of the House of Delegates, and report that they recommend the principles underlying the special committee's report and advise that proper steps be taken to establish such a bureau as recommended in the report of the committee, as published in the minutes of the last regular meeting of the House of Delegates, with the one change that the Council choose a member of the State Medical Society outside of greater New York.

Respectfully submitted,

Frederick H. Flaherty
Henry L. K. Shaw
Charles G. Stockton
Henry L. Winter
George W. Kosmak
James F. McCaw
Wesley T. Mulligan
Committee.

The President: What will you do with this report?

Dr. Charles G. Stockton: I move its adoption. Seconded by Dr. Wendell C. Phillips.

Dr. Arthur J. Bedell: I move the privilege of the floor be granted to Dr. James F. Rooney during the discussion of this report.
Seconded and carried.

Dr. James F. Rooney: I do not think that the report makes plain exactly what the committee proposes doing, and as many of the delegates are not familiar with the reports presented to the House of Delegates and the recommendations contained in them. I suggest that a motion be introduced to have the reports presented at the last meeting of the House of Delegates read before any further discussion takes place.

Dr. Henry W. Berg: I move that the report of the committee presented at the last meeting of the House of Delegates be read.
Seconded.

Dr. Charles G. Stockton: As the mover of the motion to adopt the report of the committee, I would like to withdraw it with the consent of the seconder, and make a motion that before adopting this report, that the report of the committee on the establishment of a Legislative Bureau, and the recommendations made by Dr. Rooney in his report, be read, so that the House of Delegates may have full information on all questions that may come before it.

As the seconder of Dr. Stockton's original motion to adopt the report, Dr. Phillips gave his consent to withdraw the same.

Dr. Flaherty then read the report of the Special Committee on the Establishment of a Bureau of Legislative Information.*

Dr. Flaherty also read the supplementary report of the Committee on Legislation.†

At the conclusion of the reading of these reports, Dr. Stockton moved the adoption of the report of the committee. Seconded.

After discussion by Drs. Gottheil and Berg, Dr. Gottheil moved that the motion of Dr. Stockton be tabled. Seconded.

As there was some doubt as to the vote a division was called for, with the result that 47 delegates favored the motion to table, while 59 were opposed to it.

The motion to table was declared lost.

Dr. Walter D. Ludlam offered the following amendment to the report of the committee:

The Executive Council of the Bureau shall consist of five physicians, constituted as follows: The President of the Medical Society of the State of New York and three members to be elected by the Council of that Society, and a fifth member, to be known as the director, to be elected by them. The President of the Medical Society of the State of New York shall serve during the term of his office, the elected members for one year, and the director at the pleasure of the other members. The amendment was seconded.

After discussion by Drs. Wendell C. Phillips, Frederic E. Sondern, Henry W. Berg, and James F. Rooney, Dr. Daniel S. Dougherty said he did not understand from the reading of the report of the special committee whether it meant a legislative bureau, an executive board, or what not, and he therefore moved that the whole question relative to the establishment of a legislative bureau of information and the report of the special committee be postponed until the next annual meeting of the House of Delegates.

Seconded and carried unanimously.

As there was no further business to come before the special meeting, on motion, duly seconded and carried, the House of Delegates adjourned.

Edward Livingston Hunt,
Acting Secretary.

Committee on Prize Essays

The Committee on Prize Essays have been greatly disappointed in not receiving more prompt responses to the Merritt H. Cash and Lucien Howe prizes, and would be glad to receive any suggestions from the members of the State Society. It is not possible to increase the amount of the prizes; in fact the Council has made a small contribution each year to bring the amount up to $100 each.

The Committee on Prize Essays, of the Medical Society of the State of New Jersey, have had a somewhat similar experience, and this past year they have voted a much larger sum. We will observe with a good deal of interest regarding their success.

Your committee would respectfully suggest that the subject be discussed by our various medical societies, especially the county societies, which have such a close affiliation with the parent body, and remind research workers, and members who are contributing excellent papers, regarding the possibility of making a more earnest effort to enter the competition.

The next meeting of the State Society will be held in New York City on March 22d, 1920, when the Merritt H. Cash prize, $100, will be awarded to the author of the best original essay on some medical or surgical subject, and is open only to members of the society.

The Lucien Howe prize, $100, is given for the best original contribution to our knowledge of surgery, preferably ophthalmology, and is not limited to members of the society.

The following subjects are suggested, but are not mandatory:

1. The Present Status of Poliomyelitis: Its Etiology, Pathology, Clinical Manifestations, and the present methods of Diagnosis and Treatment.
2. What have been the latest Developments in the Surgery of Injuries to the Skull, Spinal Column and Peripheral Nerves, as demonstrated in the recent World War?
3. The best essay on Wounds of the Face and Lower Jaw, and Reconstruction Work in connection with the recent war.
4. What are the special Eye Conditions which should disqualify men as workers in Industrial Occupations, Railway Service, and the Army and Navy?
5. What is the Present Status of the Classification of Pneumonia, and the Results from the employment of the Serum Treatment?

Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope containing the same motto, with the name and address of the writer. These envelopes will not be opened unless containing the successful essay. The unsuccessful essays will be returned, if requested by the author, or his agent, within one year.

The committee reserves the right to make no award if the essays submitted are not considered worthy the prize.

The essays are to be sent to the Chairman of the Committee, Dr. A. VanderVeer, 28 Eagle Street, Albany, N. Y., not later than February 15, 1920.

Albert Vander Veer, M.D.,
Edward D. Fisher, M.D.,
Charles G. Stockton, M.D.,
Committee.

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* See New State Journal of Medicine, June, 1919, page 228.
† See New State Journal of Medicine, June, 1919, page 209.

District Branch Meetings

FIRST DISTRICT BRANCH

Annual Meeting, Yonkers, N. Y., Wednesday, October 15, 1919.

The meeting was called to order by the President, Dr. Hulett, at 11.30 A. M.

The minutes of the last meeting were read and approved.

President's Address—Compulsory Health Insurance, Joseph B. Hulett, M.D., Middletown.

The Present Unrest as it Affects the Medical Profession, the Medical Practice Act or Registration Bill, Bureau of Legislative Information and Compulsory Health Insurance—Grant C. Madill, M.D., Ogdensburg, President of the Medical Society of the State of New York.

The Health Compensation League—Albert T. Lytle, M.D., Buffalo.

Workmen's Compensation Law—John P. Davin, M.D., New York.

Adjournment for luncheon.

Afternoon session 3.00 P. M.

Address of welcome, William J. Wallin, Mayor of Yonkers.

Telegrams were read from Drs. Edward C. Rushmore, Tuxedo, and Henry Lyle Winter, Cornwall, regretting their inability to be present.

School Health Service in New York State, Franklin Barrow, M.D., State Inspector of Schools.

Discussions by Drs. Samuel E. Getty, Edward W. Weber, and S. W. S. Toms.

Some Problems in the Surgery of Renal and Ureteral Stone, Edward L. Keyes, Jr., M.D., New York. Discussion by J. Fielding Black, M.D., of White Plains.

A Plea for Greater Care in Hand Surgery—J. Fielding Black, M.D., White Plains.

A Discussion of the Sub-Mucous Resection of the Nasal Spectum—W. Meddaugh Dunning, M.D., New York.

The Delegenière Bone Graft—Edwin G. Ramsdell, M.D., White Plains.

On motion a vote of thanks was given to Dr. Samuel F. Getty, Chairman of the Reception Committee, for the hospitality and entertainment provided for the members.

A vote of thanks was also extended to the Y.M.C.A. for the use of their rooms.

THIRD DISTRICT BRANCH

Albany, October 9, 1919.

Albany Hospital.

Surgical Clinics 9 to 10 A. M.

Dr. E. A. VanderVeer and Dr. A. M. Dickinson, Carcinoma of the Stomach; Dr. J. L. Donhauser, Acute Appendicitis: Dr. A. Stein, Carcinoma of the Breast; Dr. A. H. Traver, Gall Stones.

Medical Clinics 10 to 11 A. M.

Leukaemia.

Dr. T. Ordway, Chronic myelogenous—treated by radium. Relation of acute leukaemia to so-called Chloroma; Dr. C. B. Hawn, Chronic myelogenous—under X-rays; Dr. L. W. Gorham, Acute leukaemia.

Specialties 11 to 12 M.

Dr. J. A. Sampson, Demonstration of gynecologic material; Dr. J. N. VanderVeer, 1. Hereditary syphilis, 2. Hematuria, 3. Prostatic abscess; Dr. L. Archambault, 1. Organic sciatica; Dr. N. K. Fromm, 2. Cervical myelitis, 3. Pseudo Parkinson; Dr. J. N. Berry, Demonstration, 1. Osteochrondritis, 2. Terthe's disease; Dr. P. W. Harrig, 1. Severe ache, 2. Gumma of the clavicle.

Pathological Laboratory.

Demonstrated Specimens; Eye and Ear.

Dr. A. J. Bedell, 1. Convergent strabismus—Four boys same family; Dr. C. H. Moore, 2. Retinitis pigmentosa, 3. Retinal detachment—trephined, 4. End result of magnet extraction foreign body in vitreous, 5. Cataract extractions, 6. Case showing complete loss of rotation reaction bilateral dead labyrinthe.

New York State Public Health Laboratory

Dr. A. B. Wadsworth, Director, was opened for inspection the entire morning.

St. Margaret's House

Demonstration 11 to 12 M.

Dr. H. L. K. Shaw, Infant feedings.

St. Peter's Hospital

Medical Clinics 9 to 10 A. M.

Dr. F. C. Conway, 1. Progressive muscular dystrophy. Erb's juvenile type with scleroderma; Dr. J. F. Rooney, 2. Progressive muscular atrophy, 3. Dyspepsia of reflex origin, Chronic appendicitis, Chronic endocarditis, 4. Polyserositis. Pick's syndrome, 5. Erb's syphilitic spinal paralysis, 6. Postero-lateral sclerosis.

Surgical Clinics 10 to 11 A. M.

Dr. J. A. Cox, End results of open treatment of fractures. Six cases; Dr. C. G. Hacker, 1. Chronic osteomylitis tibia, 2. Multiple fracture of humerus, 3. Unusual fracture—Head of tibia, 4. The Mouldech—Plaster of Paris Splint. Technique of application and uses.

Wolfert's Roost Country Club

12.30 P. M. Luncheon by the Medical Society of the County of Albany. 1.30 P. M. Business Meeting.

Scientific Session

President's Address; "Our Responsibilities." A very practical paper on the duty of the physician in regard to Compulsory Health Insurance. Luther Emerick, M.D., Saugerties.

"Prevention of Relapses in Cases of Arrested Tuberculosis, with Practical Demonstration of Masso—and Aero-therapy, and Discussion of Hydro-, Solar and Psycho-therapy." S. Adolphus Knopf, M.D., New York City.

"Encephalitis Lethargica," Herman C. Gordinier, M.D., Troy. Discussed by James F. Rooney, M.D., who reported several other cases.

"Some Remarks on Work in a Base Evacuation Hospital, A.E.F., James N. VanderVeer, M.D., Albany.

"Diagnosis and Treatment of Renal Disease, based upon the Newer Laboratory Methods," Nelson K. Fromm, M.D., Albany.

The following motions were made, seconded and carried:

That, a Vote of Thanks be given to the Medical Society of the County of Albany and its Committee of Arrangements, for the many varied and instructive clinics and for the enjoyable entertainment and luncheon at Wolfert's Roost Country Club and to the speakers who have given the excellent papers.

That, the Third District Branch of the Medical Society of the State of New York put itself on record against Compulsory Health Insurance.

That, we uphold the hands of the Counselor of this Branch so that we may bring the action of this Society to the notice of the State Society.

FIFTH DISTRICT BRANCH

Annual Meeting, Rome, N. Y., October 1, 1919.

The meeting was called to order in the Custodial Asylum by the President, Dr. Lewis, at 10:30 A. M. Address of welcome by Hon. H. C. Midlam, Mayor of Rome.

Address by G. Massilon Lewis, M.D., President of the District, on "The Psychology of Imagination."

Address was given by Grant C. Madill, M.D., on matters of interest to the medical profession and the State Medical Society.

The minutes of previous meeting were read and approved.

The following officers were elected for the ensuing two years: President, W. D. Alsever; first vice-president, Charles Bernstein; second vice-president, E. A. Gladman; secretary, George W. Miles; treasurer, Nelson O. Brooks.

At the close of the morning session the members were entertained at luncheon by Dr. Bernstein.

Afternoon session. A talk was given by Dr. Robert Bartlett, superintendent Oneida County Hospital, on Pellagra, and case exhibited.

"Gangrene associated with Diabetes," illustrated with moving pictures, by Dr. John R. Williams, Rochester. Discussion by Drs. Alsever, Deavor, Kidder, Levitan, and Dr. Williams.

"Blood Transfusion," by Dr. W. Warren Britt, Tonawanda; discussion by Drs. Pritchard, Clark, Williams, and Dr. Britt.

"Health Insurance," by Albert T. Lytle, M.D., Buffalo.

"Health Insurance and State Medicine," Walter H. Kidder, M.D., Oswego.

"Compulsory Health Insurance," by W. D. Alsever, M.D., Syracuse. Discussion opened by Dr. Brooks, Oneida.

Dr. Pfaff, Oneida, moved that a rising vote of thanks be extended to Dr. Bernstein for his hospitality; seconded and carried. Health service for school children in New York State.

SIXTH DISTRICT BRANCH

Thirteenth Annual Meeting, Oswego, N. Y., Tuesday, October 7, 1919.

The meeting was called to order in the Owego Court House, by the President, Dr. R. Paul Higgins, at 10.42 A.M.

Dr. Cobb not having arrived, Dr. Luzerne Coville, acted as secretary (pro-tem).

It was moved, seconded and carried that the next annual meeting be held in Hornell.

A motion was made by Dr. Phillips that the By-Laws (1920) be changed so that the officers of the Sixth District Branch be elected for a one year term.

The following officers were elected for the ensuing year:—President—Leon M. Kysor, M.D., Hornell; 1st Vice-President—John M. Quirk, M.D., Watkins; 2d Vice-President—Willets Wilson, M.D., Ithaca; Secretary—Willis S. Cobb, M.D., Corning; Treasurer—Stuart B. Blakely, M.D., Binghamton.

Scientific Session

President's address—Health Insurance Legislation and How Shall We Prevent It—R. Paul Higgins, M.D., Cortland. Discussions by Drs. Madill, Booth, Dyer, Quirk and Swain.

It was moved, seconded and carried, that the Delegates go to the meeting of the House of Delegates with the understanding that all were opposed to the bill on Compulsory Health Insurance.

The Changing Status of the Physician—Arthur W. Booth, M.D., Elmira. Discussion by Drs. Damoth and Loop.

Following the discussion of Dr. Booth's paper, the meeting adjourned for dinner at the Ah-wa-ga Hotel.

Afternoon Session at 2 o'clock.

Some Interesting Cases of Ectopic Gestation—Thomas F. Manley, M.D., Norwich. Discussions by Drs. Loop and Quirk.

The paper by Donald Guthrie, M.D., Sayre, Pa., was read by Dr. Lundblad, Sayre, Pa. Discussions by Drs. Tinker and Lundblad.

Diagnosis and Treatment of Peripheral Nerve Injuries, Martin B. Tinker, M.D., Ithaca, followed by discussion.

Odds and Ends of Military Life—Major Kennedy F. Rupert, M. C., U. S. A.

Dr. Norman's paper on Early Diagnosis of Arterio-Sclerosis was read by John M. Quirk, M.D., Watkins.

Modern Hospital Record as adopted by the Binghamton City Hospital—Frank M. Dyer, M.D., Binghamton.

Dr. Barrows, State Inspector of Schools gave a very interesting talk with stereopticon views. School teachers and children were present. Albert T. Lytle, M.D., Buffalo, spoke on The Protective League.

A vote of thanks was given to the doctors and people of Owego for their hospitality.

One hundred and twenty-seven doctors attended the meeting.

SEVENTH DISTRICT BRANCH

Thirteenth Annual Meeting, Rochester, Thursday, October 2, 1919.

The meeting was called to order bv the President, Dr. Pratt. The following officers were elected for two years. President, Owen E. Jones; first vice-president, J. Pope Delaney; second vice-president, Thomas T. Mooney; secretary, Kirby Collier; treasurer, Alfred W. Armstrong.

Scientific Service

A short paper by the president, John Pratt, M.D.

"Tuberculosis Lymph Nodes," by Grant C. Madill, M.D., Ogdensburg, President Medical Society of the State of New York. Discussed by Drs. Zimmer, Lytle, Winters, O'Neil and Dolph.

"The Occipito-Posterior Position Problem and Its relation to Retractioning Dystosia," by Ralph H. Pomeroy, Brooklyn. Discussed by Drs. Brown, Quigley and Pomeroy.

"Diagnosis and Treatment of Gastric Conditions," by I. Harris Levy, Syracuse. Discussed by Drs. Swan, Madill, Edward Mulligan and Lavy.

The meeting was then adjourned for luncheon.

"Personal Experience for Post Operative Malignant Disease," by Marshall Clinton, M.D., of Buffalo, N. Y. Discussed by Drs. Edward Mulligan, Zimmer and Palmer and Dr. Clinton.

"Immediate Sterilization and Closure of Chronic infected wounds," by Wayne Babcock, M.D., of Philadelphia, Pa. Discussed by Drs. Zimmer and Prince and Dr. Babcock.

"Hospital Psychology," by Donald Guthrie of Sayre,, Pa. Discussed by Drs. Babcock, Knickerbocker and Mulligan.

"Medicine in a Hospital Center," by William V. Evans of Rochester.

Compulsory Health Insurance, by Henry Lyle Winter, M.D., Cornwall.

County Societies

MEDICAL SOCIETY OF THE COUNTY OF ERIE.

Annual Meeting, Buffalo, N. Y.

Monday, October 20, 1919.

Regular meeting of the Medical Society of the County of Erie was held on Monday evening, October 20th, 1919, at 8:30 P. M., in the Buffalo Medical College.

President King called the meeting to order and Secretary Gram read the minutes of the last regular meeting held June 30, 1919, and the minutes of the meeting of the Council held September 12, 1919, and also the minutes of the Council held on October 20, 1919, all of which were approved as read.

Dr. W. F. Jacobs, Chairman of the Committee on Membership, presented the applications for membership of the following: Drs. A. R. Ellison, K. A. Smith, A. B. Graves, J. J. Hanavan, S. C. Lojocono, H. N. Goldstein, M. Dorewitz, F. M. Crage, J, A. Hatch, B. S. Park, H. W. Culbertson, H. C. Goetz, W. R. Stewart, E. C. Beck, J. P. La Duca, E. P. Orvis, E. M. Pettingill, Clarence P. Rottger, F. H. Valone, V. Graeser, C. Simon and F. I. Creager.

By separate motions the Secretary was directed to cast the ballot of the Society for each of the twenty-two applicants, and they were consequently declared duly elected.

The following officers were nominated for the year 1920:

For President, Dr. Earl P. Lothrop; for First Vice-President, Dr. Arthur G. Bennett; for Second Vice-President, Dr. DeWitt H. Sherman; for Secretary, Dr. Franklin C. Gram; for Treasurer, Dr. Albert T. Lytle.

Moved by Dr. Wende, seconded by Dr. Cott, that Dr. John D. Bonnar, Dr. Archibald D. Carpenter, Dr. Francis E. Fronczak, Dr. Arthur G. Bennett and Dr. Frank A. Valente be nominated for Censors.

Moved by Dr. Sharp, seconded by Dr. Hopkins, that Dr. Arthur G. Bennett, Dr. George F. Cott and Dr. Julius Richter be nominated for delegates to the State Society.

On motion of Dr. Richter, seconded by Dr. Cott, Dr. H. W. Cowper was nominated as Chairman of the Committee on Legislation.

On motion of Dr. Jacobs, seconded by Dr. Bennett, Dr. Grover W. Wende was nominated for Chairman of the Committee on Public Health. Dr. Wende declined the nomination and nominated Dr. C. A. Bentz; nomination was seconded by Dr. George F. Cott.

Dr. Bennett nominated Dr. W. F. Jacobs for Chairman of the Committee on Membership. Dr. Jacobs declined the nomination, stating that he had served several terms on this committee and that his principal assistant on the committee had been Dr. Jesse N. Roe. He therefore nominated Dr. Jesse N. Roe. Nomination was duly seconded.

Dr. McKenney nominated Dr. T. J. Walsh for Chairman of the Committee on Economics. Nomination was seconded by Dr. Cott.

President King introduced Prof. Roswell H. Johnson of the University of Pittsburg, who delivered a splendid address on "Applied Eugenics from the Standpoint of the Physician." The address was illustrated by lantern slides and was attentively followed by the large audience present.

Dr. Henry G. Matzinger led in the discussion of the address, at the close of which on motion of Dr. Jacobs a vote of thanks to Prof. Roswell H. Johnson was unanimously adopted for his splendid address.

A fine collation was served at the close of the meeting.

MEDICAL SOCIETY OF THE COUNTY OF SENECA.

Annual Meeting, Willard, N. Y.

Thursday, October 9, 1919.

The meeting was held at the Willard State Hospital, Charles T. Ostrander, M.D., President, presiding.

The Secretary's report of the semi-annual meeting was read and approved.

The Treasurer reported that there were no funds to pay outstanding debts, so by vote of the Society, an extra assessment of $1 each was levied.

The following officers were elected for the ensuing year: President, Thomas F. Cole, M.D., Romulus; Vice-President, William H. Montgomery, M.D., Willard; Secretary and Treasurer, William M. Follette, M.D., Seneca Falls; Censors, John F. Crosby, M.D., Seneca Falls, Carroll B. Bacon, M.D., Waterloo, William H. Montgomery, M.D., Willard; Delegate to the State Society, Robert M. Elliott, M.D., Willard; Alternate, C. Anna J. Brown, M.D., Seneca Falls.

The President asked Frederick W. Lester, M.D., to outline the aims and organization of the Seneca County Medical Protective Association.

Scientific program followed:

Immunity—O. H. W. Mitchell, M.D., Syracuse University.

Venereal Diseases and Their Control—Joseph S. Lawrence, M.D., of the State Department of Health.

Schuyler P. Richmond, M.D., Syracuse, demonstrated the administration of Salvarsan.

After a vote of thanks to the speakers, and to the Staff of the Hospital, the meeting adjourned to meet in Seneca Falls in May.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

The Medical Treatment of Cancer. By L. Duncan Bulkley, A.M., M.D., Senior Physician to the New York Skin and Cancer Hospital. Published by F. A. Davis Co., Philadelphia, 1919. Price, $2.75 net.

Atlas of Operative Gynaecology. By Barton Cooke Hirst, M. D. Professor of Obstetrics, University of Pennsylvania. 164 Plates, 46 Figures. Published by J. B. Lippincott Co., Philadelphia.

The Future of Medicine. By Sir James Mackenzie, F.R.S., M.D., F.R.C.P., LLD., Ab., and Ed., F.R.C.P.I. (Hon.) Consulting Physician to the London Hospital. Published by the Oxford University Press, New York, 1919.

The Surgical Clinics of Chicago, Volume III, Number 4 (August 1919). Octavo of 287 pages, 116 illustrations. Philadelphia and London: W. B. Saunders Co., 1919. Published Bi-Monthly. Price, per year: Paper $10.00; Cloth $14.00.

Quarterly Medical Clinics, April, 1919. A Series of Consecutive Clinical Demonstrations and Lectures. By Frank Smithies, M.D. Volume 1, Number 2. Published by the Medicine and Surgery Publishing Co., Inc., St. Louis.

The Itineray of a Breakfast. A Popular Account of the Travels of a Breakfast through the Food Tube and of the Ten Gates and Several Stations through which it Passes, also of the Obstacles which it Sometimes Meets. By J. H. Kellogg, M.D., Medical Director of the Battle Creek Sanitarium. Published by Funk & Wagnalls Co., New York 1919. Price, $1.60 net.

The High Road to Health. By James E. Kelly. With illustrations by William Carroll. Published by Dodd, Mead and Company, New York.

The Proceedings of "The Charaka Club," Volume V. Price $4.00. Published by Paul B. Hoeber, New York.

The Physician's Visiting List for 1920. (Lindsay and Blakiston's) for 1920. Sixty-ninth year of its publication. Price, $1.75 net.

Mme. Athanassio-Benisty. Les Lesions Des Nerfs. Traitement et Restauration. Masson Et Cie Editeurs. Libraires De L'Academie De Medecine 120, Boulevard Saint-Germain, Paris, VI. 1919. 7 fr. net.

M. Loeper. Leçons de Pathologie Digestive. Quatrieme Serie. Masson Et Cie, Editeurs, Paris. 1919. Prix 10 francs.

Toxines Et Antitoxines. Par M. Nicolle, E. Cesari, C. Jouan. de l'Institut Pasteur. Masson Et Cie. Editeurs. Paris. 1919. Prix 5 francs net.

The Surgical Clinics of Chicago. Volume III, Number 5 (October, 1919). Octavo of 258 pages, 91 illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Published Bi-Monthly. Price, per year: Paper, $10.00; Cloth, $14.00.

Book Reviews

The Medical and Surgical Aspects of Aviation. By H. Graeme Anderson, M.B., Ch.B., F.R.C.S. With Chapters on Applied Physiology of Aviation by Martin Flack, M.A., M.B. And The Aero-Neuroses of War Pilots by Oliver H. Gotch, M.B., Ch.B., M.R.C.P. (London). And an Introduction by the Right Hon. The Lord Weir of Eastwood, P. C. London: Henry Frowde, Hodder & Stoughton, Oxford University Press, Warwick Square, E. C. 35 W. 32d St., N. Y. City, 1919.

The writer has been assisted in the preparation of this work by Martin Flack and Oliver H. Gotch, both of the Royal Air Force. The former supplied a chapter on "Applied Physiology of Aviation," and the latter, one on "The Air Neuroses of War Pilots." This was really intended to be a wartime publication as it went to the publishers November 5th, 1918, but of course did not make its appearance until after the signing of the Armistice.

On this account, therefore, it may not arouse the interest that it otherwise might; on the other hand aviation has reached the stage of commercial practicability, and enough men are devoting their lives and endeavors to the flying profession to make a book of this character very much "á propos."

Before the great war the medical literature on aviation was rather sparse, and even now it is none too voluminous; therefore, it would seem that there is room for many works of the high standard of this one.

Every phase of the subject is gone into from the medical selection of candidates for aviation, through the special aspects of surgery in aviation, to the symptoms and treatment of aeroplane "dope" poisoning.

The book is well written, and profusely illustrated; furthermore, the style and arrangement are both pleasing and simple.

W. H. Donnelly.

Psychoses of the War, Including Neurasthenia and Shell Shock. By H. C. Marr, Lt.-Col., R.A.M.C. (Temp.). Fellow Royal Faculty Physicians and Surgeons, Glasgow; Neurological Consultant Scottish Command; Physician Glasgow District Mental Hosp. Oxford University Press, 1919, New York and London, 1919.

The author of this work is a man evidently of long experience, but his book has added nothing of value to the already vast amount of literature accumulated on this subject. The book is well illustrated and printed, but the text is simply a collection of cases which the author has seen and related. To one versed in modern psychiatry his classification is, to say the least, weird. He places neurasthenia under the psychopathic psychoses. The only tenable conception of neurasthenia is that it is essentially a psychoneurosis and nothing more. He classifies hysteria as a subdivision of neurasthenia —neurasthenia of toxic origin—and states that it is due to a susceptible condition of the nervous system. This susceptibility is of threefold nature, first, an inherent instability of the neurones, especially those subserving *mind;* second, the presence of simple neurasthenia; and third, a toxic or toxæmic condition of the blood. The constitutional psychoses are described under a classification which has long passed into oblivion.

S. R. Leahy.

War Neuroses and Shell Shock. By Frederick W. Mott, M.D., LL.D., F.R.S., F.R.C.P.; Brevet Lt.-Col. R.A.M.C. (T.). With Preface by the Rt. Hon. Christopher Addison, M.P., Minister of Reconstruction. Oxford University Press, New York and London, 1919.

This book is by Dr. Mott, editor of "Brain." He needs no introduction to American Neurologists and Psychiatrists. Some time since, Mott wrote of Shell Shock and at that time postulated an organic basis for all cases. He now reverses himself and states very definitely that the psychogenic factor is the more frequent cause and that even in organic cases this may contribute important mechanisms. He relates cases and illustrates sections from brains of men who have died from shell concussion. He also presents cases with photo-micrographs of brains showing the effects of various gases.

The section on therapy is excellent and highly practical.

The reviewer who has seen many of these patients regards this book as one of the most important contributions on war neurosis that has yet appeared.

S. R. Leahy.

Mess Officers' Manual. Prepared by several officers of the Division of Food and Nutrition of the Medical Department, U. S. Army. 16mo. of 192 pages; illustrated. Philadelphia and New York: Lea & Febiger, 1919. Price, $1.50.

This little pocket manual, as its title implies, is a compilation of much useful information on the composition, source, character, nutritional value, handling, storage and inspection of foods. This is followed by a chapter on kitchen economy and management and the various duties of the mess officer of the U. S. Army. Although written expressly for the mess officer, it contains much information usually to be found in books on foods, concisely stated in non-technical language so far as possible. It should be valuable as a guide to dietitians and those whose duties are to provide food for large numbers of civilians, as hospitals, jails, contract laborers and hotels. There are a few well arranged tables and illustrations which enhance the value of the book. It also contains a glossary of scientific terms and a good index.

E. H. B

The Surgical Clinics of Chicago, Volume III, Number 3 (June, 1919). Philadelphia and London, W. B. Saunders Co. Published Bi-Monthly: Price, per year: Paper, $10.00; Cloth, $14.00.

The June issue of the Surgical Clinics of Chicago, contains much material of interest. Dr. Roy L. Moodie contributes an interesting article on ancient skull lesions and prehistoric trephining. At a clinic on the injuries of joints, Dr. Eisendrath reviews the pathology of various forms of war injuries and the underlying principles of treatment and shows how this experience may be applied to injuries acquired in civil life.

Dr. William F. Hewitt presents three Cæsarean sections done in his clinic at the Presbyterian Hospital. After reading, one is inclined to believe that a Cæsarean can be done for almost anything.

Sterility, its causes in the male and female; technic of uterine insemination, is taken up by Dr. Pespinasse. Dr. Gatewood reviews the post-operative care of ulcer cases, both gastric and duodenal. On the whole this number is on a par with most of its excellent predecessors.
F.B.D.

The Surgical Clinics of Chicago, Volume III, Number 4 (August, 1919). Philadelphia and London, W. B. Saunders Co. Published Bi-Monthly: Price, per year: Paper $10.00; Cloth $14.00.

This number of the Surgical Clinics of Chicago includes contributions from twenty-two surgeons, with many well-known names among them. The clinics embrace war-surgery, general surgery, gynecology and obstetrics. The war-surgery is based on clinics from U. S. General Hospital No. 28, Fort Sheridan.

The complete yet concise method of case reporting brings the reader into intimate contact with the surgeon at work. The illustrations, which are numerous, add materially to the value of the reports.

The employment of the case method as medium of expression, holds the attention with a double interest—interest in the case at hand, and interest in the surgical principles underlying the treatment of such cases.
R. F. B.

Plastic Surgery. Its Principles and Practice. By John Staige Davis, Ph.B., M.D., F.A.C.S. With 864 Illustrations containing 1,637 figures. Published in 1919 by P. Blakiston's Son & Co., Philadelphia. Price, $10.00 net.

Dr. Davis is to be complimented upon the presentation of such a timely work. The book is well arranged and records his years of experience in this particular field. The field of surgery has grown to such an extent that the time is ripe to further invade special branches. Dr. Davis' book will give added impetus to this idea and it is to be hoped that the teaching of plastic surgery in our institutions will be placed on a higher plane. A department of this kind should be recognized in every Medical College.

Plastic surgery invades every branch of General Surgery. In a general way plastic surgery extends from the scalp to the sole of the feet. The work of the department of Maxillo-facial surgery of the Army Medical Corps is a splendid testimonial to the value of this specialized work. It is very special work and should be delegated to those especially trained to do it.

One third of the book, which comprises in all about 700 pages deals with Prosthesis, Skin Grafting, Transplantation of tissue, and Pedunculated Flaps. In this connection the author, also properly includes the treatment of wounds, ulcers, and varicose veins, scars, keloids, and malformations. Harelip and cleft palate receive due attention. The author has touched upon plastics as they relate to the bladder and penis, and atresia of vagina. The balance of the book is devoted to various regions, eyelids, ear, external nose, cheek, jaws, lips, neck, trunk and extremities.

We have known of Dr. Davis' work, especially his writings upon deep multiple grafts for years. We offer congratulations upon the presentation of such a splendid book. A cordial reception is assured. Its principle is basic, teaching is sound, his methods tried and spring from mature judgment.

Pulmonary Tuberculosis. By Maurice Fishberg, M.D. Second Edition, revised and enlarged. Octavo of 744 pages, illustrated with 100 engravings and 25 plates. Philadelphia and New York: Lea & Febiger, 1919. Cloth, $6.50.

This book represents the results of more than twenty years' experience of the author who has had more than the usual opportunities to study this disease in all its phases. Not only has the author given us the benefit of this experience, but has also incorporated in this volume the results of the experiences of the accepted authorities on the subject.

In this second edition there has been eliminated some of the less important matter of the first edition, and there has been added chapters on tuberculosis of the pleura, on spontaneous pneumothorax and on differential diagnosis of pulmonary tuberculosis.

This work is undoubtedly one of the most complete and thorough presentations of the subject that has been published in the English language. It is clear, instructive, accurate; it views and presents this disease from all angles and is written in a style which compels attention and imparts information. This edition retains the place in medical literature attained by the first edition. Everyone who attempts to treat patients should be thoroughly familiar with this work. It should be in the library of every physician.
Henry M. Moses.

Deaths

Albert C. H. Barge, M.D., Astoria, died October 23, 1919.

John F. Beiermeistrer, M.D., Rochester, died October 24, 1919.

Andrew J. Bennett, M.D., Busti, died November 1, 1919.

William G. Bissell, M.D., Buffalo, died November 14, 1919.

Samuel B. Childs, M.D., Brooklyn, died November 8, 1919.

Floyd Milford Crandall, M.D., New York City, died November 19, 1919.

William A. DeLong, M.D., Brooklyn, died October 3, 1919.

Porter Farley, M.D., Rochester, died October 18, 1919.

Adolph Hoerr, M.D., Mamaroneck, died November 12, 1919.

Charles Noah Dixon Jones, M.D., New York City, died October 30, 1919.

Stephen Henry Lutz, M.D., Brooklyn, died October 17, 1919.

Walter Seymour Reynolds, M.D., New York City, died November 22, 1919.

Whitfield T. Seeley, M.D., Warwick, died October 9, 1919.

James F. Smith, M.D., New York City, died October 18, 1919.

Lewis G. Smith, M.D., Buffalo, died October 4, 1919.

William Gaynor States, M.D., New York City, died October 6, 1919.

Francis Valk, M.D., New York City, died November 5, 1919.

W. W. Williams, M.D., Hilton, died October 16, 1919.

NEW YORK STATE JOURNAL OF MEDICINE

A Journal Devoted to the Interests of the Medical Society of the State of New York

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Vol. XIX. DECEMBER, 1919 No. 12

EDITORIAL DEPARTMENT

THE ANNUAL MEETING

THE annual meeting of the Medical Society of the State of New York will be held this year on March 23-25, in New York City. There will be two distinct features at this meeting—the social and the scientific.

The social side will be emphasized and made more of a feature than on any previous occasion. There will be a reception, music and dancing, exhibits, and interesting papers on medical subjects.

The sections will be numerous, the subjects treated diversified, and the speakers well-known men. New sections will be added and old ones brought up to date.

The House of Delegates, which is the legislative body of the Society, will meet on Monday afternoon, March 22, in Hoosack Hall, the main hall on the ground floor of the New York Academy of Medicine at 17 West 43d Street. This meeting will last through Monday afternoon and evening, adjourn, and complete its work on Tuesday morning. At this adjourned meeting the election of officers for the ensuing year will take place. This includes a president, three vice-presidents, a secretary, an assistant secretary, a treasurer, an assistant treasurer, and the chairmen of the six standing committees. The House of Delegates will elect six delegates and alternates to the annual meeting of the A. M. A. Five of these delegates will serve for two years and one for one year. The delegate serving for a single year will fill the place made vacant by the death of Dr. Crandall, the late secretary of the Society.

On Tuesday afternoon the scientific sessions will begin. These will be held on the second floor of the Waldorf-Astoria and on the third floor of the Hotel McAlpin. The Committee on Arrangements found it impossible to secure all the room needed at the Waldorf and therefore elected that some of the sections hold their meetings at the Hotel McAlpin.

The sections this year are unusually promising. The Committee on Scientific Work has succeeded in securing men of prominence to read papers and others of equal prominence to carry on discussions. There will be one or two joint sessions where it seemed best to present a symposium and so economize time and increase interest. The Sections on Surgery and Medicine will have especially interesting papers. The detailed program of each section will be published in the January issue of the Journal. A new feature of the scientific session will be the inauguration of a Section on Neurology and Psychiatry. It will be the first time in seven years that the State Society has attempted to organize a Neurological Section. Dr. Salmon and Dr. Bailey have both promised to attend. Dr. Fordyce, Dr. Cotton and other well-known neurologists will contribute papers.

The various scientific sessions will continue all of Wednesday and Thursday morning.

On the evening of Tuesday, March 23, there will be the large open meeting of the Society. This will consist of addresses by the president and well-known men. The names of these speakers will not be made known until the full program of the meeting is published in January. These addresses will be followed by the president's reception, after which there will be dancing.

This reception will be held in the ballroom of the Hotel Pennsylvania. It is proposed to make the reception and dance a feature of the evening.

On Wednesday evening the banquet of the Society will be held at 7:30 P. M. in the ballroom of the Waldorf-Astoria. It will conclude with a few after-dinner speeches on topics of the day by eminent speakers. An opportunity will be afforded most of the ladies to listen to these from seats in the boxes. Applications for these should be made early, as the space is limited. Still another feature of the session will be the space devoted to the exhibits, which will be unusually large; it will be the same as that which was occupied at the recent session of the Clinical Congress of Surgeons at the Waldorf-Astoria.

On Thursday the scientific sections will complete their programs.

As the plans become more definite additional information will be published. This outline of the meeting is given in order to afford the members of the Society an opportunity to make their plans and secure their hotel accommodations in advance. A list of hotels, together with their rates, will be published in a later edition of the Journal. Any additional information can be secured by writing to the chairman of the Committee on Hotels at the office of the secretary, 17 West 43d Street.

The headquarters of the Society and the Bureau will be at the Waldorf-Astoria. Every member of the Society upon arriving should at once present himself at this bureau of registration, record his name and address and receive a button entitling him to attend the meetings. Letters and telegrams may be sent to this address and information may be obtained as to the details of the meeting and concerning accommodations. A member of the Committee on Entertainment will always be on hand, so that no one need lack help or guidance.

It is useless to urge members of this Society to make a special effort to come to the March meeting. Already the indications are that the session will be largely attended. It promises to be one of the most interesting meetings which the Society has ever held.

This meeting will afford an exceptional opportunity to renew old friendships, to make new ones, to keep abreast of modern medical progress and to hear and meet the leaders in the medical profession.

To fail to take advantage of this meeting would be to miss one of the notable events of the year. E. L. H.

Original Articles

DIAGNOSTIC METHODS IN THE ANEMIAS.*

By ARTHUR H. SANFORD, M.D.
ROCHESTER, MINN.

BIERMER'S revival of interest in the disease described by Addison gave us the classical description of that complex of symptoms whereby the diagnosis of progressive pernicious anemia is made today. Ehrlich pointed out a certain type of blood picture in this anemia which has not been changed by subsequent minor improvements in staining methods.

Barker and Sprunt in recent papers, have used the expression "so-called pernicious anemia" in referring to this condition. Our conception of the misnomer in the term applied to the Addison-Biermer type of anemia applies to its being called "primary anemia." As yet there has not been established an etiologic factor for this condition which is primarily located in the hematopoietic system. We may conjecture that some unknown cause is perversely accelerating the normal rate of blood destruction and coincidently overstimulating the blood-forming organs to the point of exhaustion. However, if some known etiologic factor produces a "color-index" of 1 + and an anemia that finally terminates fatally, clinicians are prone to discard the diagnosis of the condition as "true idiopathic progressive primary pernicious anemia." But as soon as all of the factors concerned with the production of this syndrome have been found, we shall probably recognize that the anemia, though progressive and malignant, is not primary, but is truly secondary to some other condition. This again is mere conjecture, for modern diagnostic methods throw no light on this point.

It is unnecessary to reiterate the description of the familiar findings in the Addison-Biermer type of anemia and of those points that differentiate it from some of the other rare and somewhat obscure diseases in which anemia is one of the cardinal symptoms. It might be mentioned at this time, however, that either this particular disease is on the increase or else we have become more keen in the diagnosis of the condition, as it is an undoubted fact, heard in all sections of the country, that we are seeing more cases of "pernicious anemia" than we did ten or fifteen years ago.

In the differentiation of diseases in patients who complain chiefly of weakness, who have anemia of obscure origin, with color indices about or slightly above one, with icteric tinges to their skins, or histories of slight chronic jaundice, with spleens that may or may not be palpable, there are certain diagnostic tests that we have made use of in the past few years that have proved to be of some real value. In no single instance have all these procedures been employed nor has any one single method been used for all the patients whom we have seen at the Mayo Clinic. However, the following procedures may be of benefit in adding evidence to the ordinary blood findings and to the clinical history.

1. Analysis of the gastric contents by means of the test meal and a subsequent X-ray examination of the stomach.
2. A careful neurologic examination, and examination of the eye grounds.
3. Tests for the fragility of the erythrocytes.
4. Detection of evidences of blood destruction by determinations for urobilin and urobilinogen in the stool, or preferably in the duodenal contents.
5. Serologic tests for lues.
6. Examination of stools for parasites.
7. Inspection of the mouth, especially the tongue, and a thorough examination of the teeth and tonsils. The possibility of chronic sepsis originating here, and of foci of infection in other parts of the body, should have general consideration.

Among the simple clinical laboratory procedures that are not of themselves diagnostic but which add to the evidence that the disease under consideration is pernicious anemia is the finding of achlorhydria in the contents of the stomach by the ordinary test methods, with the Ewald meal. This test should usually be followed by X-ray examination in order to exclude the possibility of malignant neoplasm as a cause for the achlorhydria. Practically always in pernicious anemia there are no free acids present; the total acidity amounts to about 6 or 8. The X-ray examination of the stomach in pernicious anemia gives a negative result.

The nervous symptoms of pernicious anemia are known to resemble the symptoms of tabes dorsalis in many respects. A careful neurologic examination, however, will bring out the differentiating points: the changes that take place in the cord are not only in the posterior columns but in the lateral bundles as well. The findings as usually reported by the neurologist are those of "subacute combined sclerosis." Woltman has pointed out, in a pathologic study of the brain in pernicious anemia, that there are definite degenerated areas in the medullary portions of the cerebrum similar to those found in the posterior and lateral funiculi. The gray matter is also by no means immune from the destructive process and at times degeneration around the pyramidal cells on the margin of the gray matter which may lead to their ultimate destruction is fairly demonstrable. It is considered that the clinical manifestations such as somnolence, apathy, and delirium are possibly in a measure dependent on such lesions although the chief cause of the symptoms is probably the toxin itself. Subacute combined sclerosis is also found in other conditions such as in leukemia, Addison's disease, severe secondary anemia, nephritis, posterior sclerosis, pelagra, tuberculosis, syphilis, chronic alcoholism, lead, phosphorus, or arsenic poisoning, or in other forms of chronic intoxication. It still remains that if the patient presents the classical picture of pernicious anemia without any signs or history of the diseases just mentioned, a neurologic examination will add much confirmatory data. In the superficial sensibility, tactile pain and thermal reactions are usually diminished in a large percentage of instances. The vibration and joint senses are both greatly impaired. These deep sensations are elicited by means of a low pitched tuning fork applied over bones or joints. As has been mentioned, signs of apathy are usually present when there is advanced change in the nervous system in pernicious anemia; there may be also true psychoses or other impairments of mentality. Unlike tabes dorsalis the reflexes, due to the blocking that takes place in the lateral bundles, often may be increased rather than diminished. The early case of pernicious anemia with only an involvement of the posterior columns may show the diminished reflexes of tabes, but ordinarily a positive Babinski and increased patellar reflexes are present. Lack of co-ordination may be such that the person cannot touch two forefingers together with his eyes closed or touch the tip of his nose without over-reaching. Instability in standing and a well marked Romberg, if the patient has strength to support himself, characterize the advanced stages. The gait may be ataxic although later, unlike tabes dorsalis, it may become both spastic and ataxic. In a recent study, from the standpoint of the nervous system alone, of 150 of the cases of pernicious anemia at the Mayo Clinic, Woltman found evidence of nervous tissue disintegration in 80 per cent of moderately advanced types; this is in accord with the figure of Minnich who demonstrated that 77 per cent of the cases of pernicious anemia are associated with lesions of the spinal cord. Subjectively, some form of paresthesia such as numbness and tingling is rarely absent. Objectively, the most striking disturbance is in the altered reflexes, and the disturbance of vibration and joint sensibilities. Minnich emphasizes the point that the examination of the nervous system is of inestimable value in differentiating pernicious anemia from other anemias. The frequency of cord changes in pernicious anemia is not generally appreciated by clinicians. As part of the neurologic examination, or at times preferably as a report of the eye specialist, very important and characteristic findings may be obtained from an ophthalmoscopic examination of the retina. The description of the retinal changes that occur in pernicious anemia is tersely and adequately dealt with in Knapp's recent book on "Medical Ophthalmology."

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 7, 1919.

"In severe anemias multiple hemorrhages and small white degenerative foci are observed in the retina. They are important from a diagnostic standpoint, from the great regularity with which they occur. This is particularly true in the progressive pernicious type of anemia where they occur in 50 per cent of the cases. Some claim that in the acme of the disease they are practically constant. . . . Small hemorrhages, followed after a few days by multiple ones, then very large extravasations of blood are very characteristic and indicate a severe prognosis." Similar ophthalmoscopic pictures occur in other conditions. Knapp mentions the anemia of *ankylostoma duodenale* and *bothriocephalus latus* infections which, by some observers, have been considered as merely instances of pernicious anemia with known etiology. The retinitis in the cachexia of malignancy, and in all forms of chronic intoxications, is very similar but it is claimed that there are distinguishable differences in the picture.

The physician may be puzzled to differentiate pernicious anemia and some other condition causing blood destruction and an attendant icteric tinge to the skin and sclera; especially may this apply to hemolytic jaundice. The latter rare disease is characterized by anemia. The jaundice is of hematogenous origin and is usually supposed to be due to the setting free of coloring matter of the blood through the destruction of erythrocytes. The spleen is enlarged in the later stages of the disease. The anemia is usually of the secondary type, although cases are recorded in which the blood picture was practically that of pernicious anemia in those cases of hemolytic jaundice that go on to a fatal termination. The simple laboratory test for the degree of resistance of the corpuscles in hypotonic salt solution may be an aid in the differentiation in this type of case. A number of methods have been advocated; we have found that a modified Ribierre test is very convenient and quickly furnishes the desired information. The necessary apparatus consists of a double row 12-hole rack full of Wassermann tubes, freshly made sodium chlorid solution of exactly 0.5 per cent strength, distilled water, a pipette with a small tip for diluting the salt solution with the distilled water by the drop method, and an all glass syringe for obtaining the blood by venipuncture. The test is "set up" by placing 25 drops of 0.5 per cent sodium chlorid solution in the first tube, 24 drops in the second, and one less in each succeeding tube than is in the one immediately to the left of it. No distilled water is added to the first tube, but in the second tube one drop, in the third tube two drops, and so on, so that the total number of drops of sodium chlorid solution and distilled water is twenty-five. Blood is obtained from the person's veins by venipuncture and one drop of blood is added to each tube of hypotonic salt solution. At the same time, for control, there is placed in a similar number of tubes, blood from a person without jaundice. A normal person will show a slight hemolysis of his red cells in 0.40 per cent or 0.42 per cent sodium chlorid solution. This is evidenced by a slight tingling of the supernatant fluid after the cells have settled out of the salt solution. Hemolysis is complete at 0.32 per cent to 0.36 per cent salt solution, evidenced by the laking of the entire mass of corpuscles suspended in the salt solution so that there is no residue when the tube is briskly shaken. The fluid is stained an even red by the free hemolysis and should be clear and transparent. Fragility is increased in jaundice of the hemolytic type, either of the acquired or of the congenital variety, that is, hemolysis begins in hypotonic solution as strong as 0.48 per cent or 0.5 per cent. The cells are completely broken up at 0.40 per cent or 0.42 per cent sodium chlorid solution. When the cells of tubes containing blood of a person suffering from this malady are compared with those of a normal person's blood, there is a striking difference in the point of beginning and complete hemolysis. On the other hand, in pernicious anemia as in the obstructive type of jaundice, either the erythrocytes are normal in their relation to hypotonic salt solution, or there may be an increase in resistance rather than an increase in fragility, so that hemolysis may not begin except at the low point of 0.36 per cent or 0.34 per cent and it may be complete only in 0.28 per cent sodium chlorid solution, or it may even be incomplete at this lowest dilution so that there is some corpuscle residue even in the very low strength solutions. While this test is not by any means necessary in the ordinary typical case of pernicious anemia, it has been found on several occasions to have been of value in differentiation when there was some question as to whether we were dealing with pernicious anemia or hemolytic jaundice. A definite diagnosis of hemolytic icterus is of importance, as splenectomy usually results in the cure of the condition.

Eppinger's work in the estimation of urobilin and urobilinogen in the stool stimulated interest in this manner of estimating blood destruction, especially in cases of pernicious anemia and hemolytic jaundice. He made use of the Charnas spectrophotometric method which is somewhat complicated for the ordinary clinical laboratory. In this country the more simple procedure for making a quantitative estimation of these substances was devised by Wilbur and Addis. Recently we have used a still further modification originated by Schneider, and have reported our results in a large series of cases. Schneider's test depends on the adaptation of the Wilbur and Addis method for determining the quantity of urobilin and urobilinogen in the duodenal contents recovered by means of the Einhorn or Rehfus tube. There is very little technical difficulty in obtaining a sufficient quantity of fluid from the duodenum by this method. The only precaution necessary is to be certain to exclude anything but fluid coming directly from the duodenum, that is, gastric contents should be siphoned out first. Then as the capsule moves from the pylorus into the duodenum the fluid becomes yellow in color and finally a clear bile is obtained. It may vary in color from pure yellow to a chocolate brown. The fluid should be tested by means of litmus or Congo Red and nothing but alkaline fluid should be kept. The duodenal contents should be collected in a small amber-colored bottle and as rapidly as possible about 20 c.c. of the liquid should be collected. This 20 c.c. portion is divided in two 10 c.c. portions in two 25 c.c. graduates. One portion is used for a rough quantitative estimate of the amount of bilirubin present in the bile. To the other portion are added exactly 10 c.c. of an alcoholic solution of zinc-acetate, so-called Schlesinger's reagent. The mouth of the graduate is closed with the thumb and the contents thoroughly shaken for about one minute. The mixture is then filtered through a single layer of coarse filter paper, 10 c.c. of the filtrate being collected in another clean graduate. This filtrate now contains 5 c.c. of duodenal contents and 5 c.c. of Schlesinger's solution. To it is added exactly 1 c.c. of Ehrlich's aldehyde reagent with a 1 c.c. pipette. If urobilinogen is present in any considerable amount, the fluid is apt to turn slightly red on the addition of the Ehrlich's reagent. If urobilin is the chief constituent present, there is a green opalescence in the fluid when viewed by reflected light. The mixture is set in the dark for about fifteen minutes before it is examined with a spectroscope. This length of time seems necessary to sharpen the absorption-bands of the spectrum. With the ordinary type of spectroscope it is not difficult to detect the absorption-bands due to these substances. Urobilin presents a broad band at the blue end of the spectrum. The violet rays are completely absorbed. Urobilinogen absorbs a narrow portion of the spectrum at the yellow edge of the green, and if present in large amounts the band may be large enough to obliterate the entire yellow portion of the spectrum. The method of ascertaining the quantity of these substances present follows the system of Wilbur and Addis, which depends on the number of dilutions necessary for the disappearance of the absorption-bands from the spectrum. The Wilbur and Addis method also reckons the number of units in 1,000 c.c. of fluid. As the examination is made on only 5 c.c. of the original solution, the factor 200 is necessary to give the findings for 1,000 c.c. The number of dilutions necessary for extinction is multiplied by 200 to find the total number of units in 1,000 c.c. The total number of units is the sum of the units of urobilinogen and urobilin. In pernicious anemia and hemolytic jaundice the total reading is more than 1,000 units—often 3,000 or 4,000—while in secondary anemia there are only a few hundred units or even only a trace. Though this method may seem intricate to some, and though it may be criticized by others as being very crude in its quantitative value, a number of observations that we have made has convinced us that it is not without worth in adding to our knowledge in those diseases marked by blood destruction. It will not aid in differentiating severe hemolytic jaundice and pernicious anemia, as in both of these conditions we have blood destruction and high values for urobilin and urobilinogen, although it is true that mild hemolytic jaundice usually gives comparatively much higher values than does pernicious anemia. In a group of miscellaneous cases it was found, however, that unusually low values were obtained for secondary anemias, carcinoma, tuberculous peritonitis, syphilis, chronic infectious arthritis, gallstones, and myelocytic leukemia. The values were especially low in cases of hemorrhage. Recently Schneider has reported on the subject of "aplastic anemia." In these cases he made use of his method in ascertaining in the duodenal fluid the amount of urobilin and urobilinogen, the first time this particular test of blood destruction has been applied to this disease. He found that, contrary to the findings in pernicious anemia with low erythrocyte count, there was not a high value for these two bile-derived pigments. These are the findings of a non-hemolytic anemia. He is inclined to emphasize the fact that a study of the pigments is advisable for differential diagnosis of the aplastic from the hemolytic types of anemia and to consider this disease as not an atypical form of progressive pernicious anemia.

A severe anemia of unexplained origin is an indication for serologic tests for the exclusion of lues. I think it is safe to say that a large proportion of the persons with profound anemia who appear at our clinic have one or more Wassermann tests as a matter of routine examination. If the Wassermann test is strongly positive, syphilis is at once suspected as a cause for the blood picture. The syphilographer and the clinician agree that there is a very severe anemia simulating pernicious anemia due to syphilis. The anemia may respond at once to anti-syphilitic treatment, but it is not probable that this improvement is due merely to the arsenic used intravenously. Ordinary types of pernicious anemia do not respond so readily to this form of arsenic treatment. Typical pernicious anemia with lues is rare, so rare that it may be coincidental. Naturally the objection is raised that we are not dealing with pernicious anemia if we have a severe anemia in syphilis, no matter what the blood picture It is also of interest, however, that many of these patients do not respond to anti-syphilitic treatment until they are first treated for severe anemia, and it is remarkable that they begin to respond to treatment with arsphenamine or other intravenous treatment only if their blood condition has been improved by transfusion or other means employed in the treatment of pernicious anemia. We have also seen patients with persistent total inhibition Wassermanns who have all the findings of pernicious anemia who have not been benefited by any form of treatment. These patients die with all the symptoms of pernicious anemia. This fact has raised in my mind a question that should be considered from a serologist's standpoint, whether progressive pernicious anemia in itself may not occasionally bring about changes in the serum of the person that produce a non-specific fixation of complement with the ordinary Wassermann technic. The obvious answer to this question is that the great majority of cases of pernicious anemia are Wassermann negative. However, all serologists realize that our knowledge of the phenomenon of complement fixation is exceedingly meager and that even in syphilis itself the reaction cannot be considered truly specific.

Two intestinal parasites, the fish tapeworm, *bothriocephalus latus,* and the hook-worm, are reported in the literature as causing symptoms of pernicious anemia. A profound anemia would suggest to the clinician the examination of the patient's stool as a necessary laboratory procedure. In the South where hook-worm infections are prevalent, such an examination often reveals the cause of the severe anemia, and the proper treatment brings about a cure. Such a disease is, of course, thus classed as uncinariasis, and not classical, progressive pernicious anemia. In the Mayo Clinic hook-worm infections play little part in the diagnosis of the anemias, as we see few patients of this type from the Southern States. Those that we have seen have been cases of a more or less mild type, without the pernicious anemia blood picture. The same may be said of the much rarer infection with the fish tapeworm. I believe it is true in nearly all clinics in this country that *bothriocephalus latus* infection may very readily be excluded by the history and by a stool examination.

In the examination of the stools in the routine manner of persons with severe anemia and with all the symptoms of pernicious anemia, some form of intestinal parasite is often found. It is not unusual to find such a person infected with some of the common protozoa of the flagellate group, or even amebæ of the pathogenic type, *endamoeba histolytica*. If there is diarrhea and amebiasis, the diagnosis may be somewhat complicated by this finding. The question arises whether the parasites are commensal invaders of the alimentary tract of a person whose resistance is low, owing to the blood disease, or whether the infection is so severe that the intestinal symptoms are due to the parasites, and the anemia, though of the primary type, is truly secondary to the intestinal infection. The treatment of true pernicious anemia patients for amebiasis has not been attended with marked success. While the patient may have the parasites removed from the intestinal tract to such an extent that all subsequent stool examinations are negative, other measures are necessary to improve the blood condition.

Another protozoal parasite which I believe must be considered somewhat in detail is *balantidium coli*. This organism is easily recognized when once seen in the stool. It is larger than the ameba. Its rapid motion by means of the cilia that completely cover the ectoplasm of the organism at once attracts the attention of the microscopist. The peculiar morphology of the large parasite, the peristome lined with stout cilia, the macronucleus and the micronucleus are all readily pointed out. Severe symptoms of a chronic intestinal nature are attributed to this organism, so that in the tropics fatal cases of this type of infection are not uncommon. This parasite as a cause of disease in this country is rare, but a number of cases have been observed in various parts of the country. We have seen a small number of persons infected with this parasite who have had a blood picture of pernicious anemia. I believe this point has not been greatly emphasized in the literature, and I feel that it is one that merits some attention in the study of the anemias.

There is one point in the physical diagnosis connected with severe anemias that should be emphasized in the discussion of special diagnostic methods; that is, the inspection of the mouth for foci of infection, at the same time paying special attention to the tongue. To be sure, this should be a part of any ordinary physical examination; however, it must not be forgotten that the tongue in cases of pernicious anemia presents a peculiar glossitis that in itself may make the examiner suspect that he is dealing with something more than the ordinary type of secondary anemia. The patient may or may not complain of soreness of the tongue, although often a severe glossitis may be a part of the clinical picture. The absence of the papillæ of the tongue is so striking that the expression "bald" tongue is used as typically descriptive of this particular condition. In a large proportion of the advanced cases of pernicious anemia that we see this condition has been noted in the history as one of the striking points in the physical examination.

In this discussion of the anemias I have said very little that can be applied to any disease except pernicious anemia or as it is distinguished from those conditions that resemble pernicious anemia. The pathology and physiology involved in the discussion of the anemias calls for a longer presentation than would be suitable at this time. I have not placed much emphasis on the diseases that have been known to be benefited by surgery. Splenic anemia in the child or young adult evidenced by a blood picture of secondary anemia, leukopenia, a large spleen, and hemorrhage from the stomach, presents very little in its history or blood findings that confuses it in any way with pernicious anemia. It must, however, be distinguished from lues, chronic recurring sepsis or malaria with splenomegaly. The pseudoleukemia of infants or von Jaksch's disease also may be a manifestation of this same condition, although there is a leukocytosis instead of a leukopenia. The fact that splenic anemia is curable by surgery makes it of interest in this symposium. The peculiar color and secondary type of anemia that is due to myxedema should be mentioned. The recent work of Plummer in establishing the value of the findings of low basal metabolic rate in hypothyroid persons will doubtless prove to be of far-reaching importance.

I might also mention one other type of splenomegaly which is very rare and which is easily separated from the pernicious anemia type of anemia. I refer to the so-called Gaucher's disease, in which there is a large-cell splenomegaly with secondary anemia. Clinically, it is difficult to diagnose this disease from splenic anemia, the differentiation being made chiefly on pathologic findings.

In conclusion, then, the clinical laboratories and specialists may add corroborative evidence to the physical findings not only by the microscopic study of the blood, but also by means of the somewhat more elaborate procedures, such as tests for evidence of blood destruction, the resistance of the erythrocytes, the serologic findings as regards syphilis, the analysis of the stomach contents, the examination of the stools for parasites, and the expert examination of the eye grounds and of the nervous system.

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THE TREATMENT OF PERNICIOUS ANEMIA.*

By LOUIS HAMMAN.

BEING asked to speak about the treatment of pernicious anemia I may go at once to my subject without more than a word directed towards diagnosis. Allow me simply to remind you that we are altogether ignorant of the etiology and the pathogenesis of the disease. It is a clinical syndrome, one of the essential features of which is that the etiology is unknown. It has not a single feature which is peculiar to it. Even the characteristic blood picture is found in other conditions. The diagnosis therefore is always an exclusion diagnosis, that is, all possible conditions that cause a similar group of symptoms must be excluded before the diagnosis of pernicious anemia is made. Sometimes the most careful investigation fails to reveal the true cause of a supposed pernicious anemia which is finally disclosed by further clinical developments or by autopsy. The diagnosis of pernicious anemia being difficult and uncertain it is quite possible that under this caption is grouped a number of different conditions which we are at present unable to separate. The variations that occur in the clinical pictures of the disease lend further support to this possibility. But not only are we ignorant of the cause of the disease, we are ignorant also of the manner in which the fundamental symptoms of the disease, namely, the anemia, is produced. For plausible reasons we have come to speak of the anemia as a hemolytic anemia, but while this conception has practical advantages in facilitating comparison and description and classification, it advances not one whit our true knowledge of the nature of the disease. The idea of a hemolytic noxa of unknown structure and unknown origin insidiously destroying the red blood corpuscles cannot possibly satisfy our daily observations of the bizarre reactions that occur. Certainly we must at least assume that the bone marrow function is disturbed beyond the bounds of stimulation and exhaustion.

We are called upon, therefore, to treat the superficial symptoms of some deeply hidden disorder the nature and character of which escape our scrutiny. It is unreasonable to expect much of treatment under such discouraging circumstances and practical results do not outrun our logical anticipation. Strictly speaking there is no treatment for pernicious anemia, our endeavors are confined to combating the symptoms of the disease, a palliative or ameliorative treatment. In conformity with this unsatisfactory state of our knowledge the disease is never cured; at a varying pace but unrelentingly it carries the patient down to death. Our inquiry therefore must be limited to determining in how far this inevitable termination may be postponed, in how far the natural course of events may be modified.

Since the treatment of pernicious anemia is purely symptomatic and palliative it is necessary for us to have accurate data concerning the natural course of the disease before we can form any opinion about the value of methods of treatment. If the disease began insidiously and marched slowly but uninterruptedly downward we could clearly enough demonstrate the value or worthlessness of treatment by the power of our remedies to halt, even though temporarily, this steady progress. Unfortunately, at least for this purpose, the natural course of the disease does not march on in this smooth fashion. Biermer emphasized and every clinical observer since his time has emphasized that the natural course of the disease is marked by long and frequent pauses. While these manifestations are well known to all physicians it seems at times that eager therapeutists either ignore or offend this knowledge. It is unfair to say, as sometimes is said, that such or such treatment frequently restores patients to health, happiness and useful occupation if it be left unsaid that, alas! this state of health, happiness and useful occupation is insecure and at best but fleeting. By what marks then may we recognize that our remedies are potent? I think we can suggest but three:

1. That the course of the disease be lengthened.
2. That the course of the disease be broken by more frequent remissions.
3. That the remissions be of longer duration.

I need not dwell upon the difficulty of getting satisfactory evidence bearing upon any of these three criteria. Variations in the duration of life are hard to discover. The onset of the disease is insidious and the exact time at which it began it is often impossible to determine. Again, even in untreated cases the length of the course of the disease varies within the widest limits. Some patients go progressively from bad to worse and die within six months of the appearance of symptoms, others may enjoy ten years of health between the original attack and the first relapse. Concerning the number and duration of remissions in untreated cases we have no more reliable information. The most remarkable differences are noted. One patient may go on rapidly and almost uninterruptedly to death; another may have but one remission; another may have eight or ten. These remissions may last from a few weeks to ten years.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 7, 1919.

Confronted by such a varying natural course of the disease and without satisfactory data upon the frequency of these natural variations to guide us, how are we to reach any conclusions about the value of treatment? Our position is indeed a difficult one, and having arrived at this point we must choose one of three roads to travel further.

1. We might compare, had we sufficient data, the effects of different kinds of treatment and thus perhaps learn which of the methods we employ is the most valuable.

2. Since the natural course of the disease varies so strikingly we might search for indications that will permit us to predict whether the patient is about to start upon a period of improvement or whether an advance of the disease is imminent. Such knowledge would allow us to choose and apply our remedies with greater precision and to judge more logically of their effect.

3. We might rely entirely upon the impressions we get from our daily contact with the disease. Such impressions nearly always come from the immediate effects of treatment as they unfold themselves before our eyes. A patient critically ill is apparently snatched from the hands of death and we feel justly enough that our treatment has saved him.

However, before I can discuss the value of treatment from any of these three angles I must enumerate briefly the methods of treatment that are commonly used. These methods are chiefly five:

1. A hygienic-dietetic regimen.
2. The use of arsenic.
3. The eradication of foci of infection.
4. Transfusion.
5. Splenectomy.

1. The hygienic-dietetic regimen consists of absolute rest and a liberal diet. That the rest may be complete and the diet abundant a whole host of accessory measures are used. These include the special nurse, social isolation, enforced eating, massage, baths, stomachics, etc. Since achylia gastrica is a constant symptom nearly all physicians administer hydrochloric acid to improve digestion. Mosenthal has emphasized a plan of overfeeding which seems to be of benefit if the patient can eat the required amount of food.

2. Arsenic is the time-honored drug used in pernicious anemia. Formerly it was given by mouth; it is now the common practice to give it intramuscularly; it is often administered intravenously. In individual cases one method may have advantages over another, but there is no reason to believe that fundamentally their action is different. In most instances administration by mouth is as efficacious as other methods of administration. Arsenic certainly has no specific influence in pernicious anemia, but it does seem to influence the patient's condition and promote or hasten remissions. However, some clinicians express a doubt of it having any influence whatsoever.

3. That pernicious anemia is due to foci of infection or that foci of infection at least exercise a baneful influence in pernicious anemia is now a popular view. Such foci are diligently sought for and when found summarily eradicated, if eradication be possible. Infected teeth are removed, tonsils excised, sinuses opened, gall bladders drained, etc. Unquestionably patients often show remarkable improvement after such operations. But we are quite unable to say whether the benefit is due to the removal of an influence acting directly upon the disease, to improvement in the general condition of the patient or to improved digestion.

4. Transfusion has now become the most important and certainly the most popular method of treating pernicious anemia. I shall not review the technique of the operation nor the various methods employed. At the Johns Hopkins Hospital the citrate method has been used almost exclusively and with complete satisfaction. Views differ about the proper time to employ transfusion and whether repeated small or fewer large transfusions should be given. The results aimed at are to tide a patient over a critical period until an altered adjustment between blood formation and blood destruction may inaugurate a spontaneous remission or else directly to force such a readjustment and thus provoke a remission. The immediate effect of blood transfusion upon the blood picture has been studied in a group of cases in the wards of the Johns Hopkins Hospital by Huck. His studies show that these effects cannot be explained simply as the mechanical result of adding a stated quantity of blood to the circulation. The immediate rise in the number of red cells in some patients, for instance from 480,000 to 1,300,000 in an hour and a quarter, indicates clearly that following transfusion there is frequently a rapid redistribution of blood. Lamson's investigations on adrenalin polycythe-

mia suggest a mechanism by which such a rapid alteration in the count may be brought about. In other patients a brief fall in the red cell count occurs immediately after transfusion to be followed by a rise a few hours later. In still others there is a steady rise in the count for twenty-four hours. Finally in some a prompt rise is followed by a rapid decline so that after twenty hours the count has reached the same level at which it was before transfusion. These variations in the red cell count are paralleled by equally varying reactions in the character of the red cells, the leucocytes and the platelets. These remarkable results cover only a period of twenty-four hours, but had the observations been carried further no doubt equally interesting variations would have been discovered during the following days. They emphasize clearly enough our need for fuller information concerning the details of the effect of transfusion upon the blood and blood forming organs.

Judged by their gross effects upon the condition of the patient transfusions produce various reactions.

a. Following a single transfusion there may be marked improvement in the general condition and in the blood picture and this improvement continue and a satisfactory remission be established.

b. Following a single transfusion definite improvement may occur and this improvement be held at the newly established level. Subsequent transfusions may each carry the patient in steplike progression to a higher level of improvement until a satisfactory remission is established.

c. Following a single transfusion improvement may occur which is, however, transient, at the end of a week or two the patient's condition has returned to the level present before transfusion. Under such circumstances the patient may be kept alive for months by repeating transfusions at stated intervals.

d. Following transfusion the improvement may be so transient that the procedure benefits the patient but little and in spite of repeated transfusion his condition grows progressively worse.

5. Based upon the evidence that the spleen plays an important part in the destruction of red blood corpuscles its removal in pernicious anemia was recommended by Eppinger. The first operation was performed in 1903 and there are now many observations on record upon the influence of this procedure on the course of the disease.

If we return now to our criteria for judging the value of these methods of treatment we will find that we possess few data upon which to compare one with another. Bloomfield has analyzed the cases from the medical service of the Johns Hopkins Hospital and comes to the disappointing conclusion that in this series at least there is no evidence that transfusion, splenectomy or elimination of foci of infection prolongs the life of patients suffering from pernicious anemia beyond the average period attained by patients treated by the older methods of rest, food and arsenic. While transfusion performed at a time when the patient was not refractory brought on remission in about half the cases, still it seemed not to increase the duration of remissions. The number of cases in this series is small, but the cases were carefully studied and these conclusions must be credited until other more convincing figures are produced.

During the past ten years much attention has been directed to studying in detail the blood reaction in pernicious anemia. Without committing ourselves to any definite view about the cause of the anemia we may accept that the blood picture represents a balance between blood destruction and blood formation. Were we able to discern which of these two factors was in the ascendency we would have valuable information about the progress of the disease. A single blood examination might not be very helpful, but perhaps to follow the changes in the blood picture from day to day would tell us how the balance between destruction and formation was swinging and whether we might anticipate that the patient will improve or grow worse. It is claimed that we can get just such information from a careful study of the blood. As you see there are four possible combinations between blood destruction and blood formation:

Marked blood destruction—Marked regeneration.
Marked blood destruction—Poor regeneration.
Slight blood destruction—Marked regeneration.
Slight blood destruction—Slight regeneration.

As far as practical issues are concerned the first two combinations interest us particularly, the fourth not at all. But how are we to judge from the blood picture how the balance is shifting? What are the evidences of blood destruction and blood regeneration?

The evidence of blood destruction is usually indirect. The very presence of a severe anemia is presumptive evidence in its favor since primary failure of blood formation is a much less common cause of severe anemia. If in addition the blood picture indicates regeneration, but insufficient regeneration, the evidence is conclusive. However, this evidence does not tell us of shifting changes in destruction. We judge of these for the most part indirectly by estimating regenerative activity. The only direct method of gauging the intensity of blood destruction is to estimate variations in urobilin formation. The roughest index of urobilin formation is the appearance of the patient, the color of the skin and mucous membranes giving a clue to the degree of urobilin icterus. The yellowish color of the serum and the necessary dilution before it disappears may prove a valuable test. Quantitative tests of urobilin in the duodenal contents, in the stools and in the urine are more accurate but tedious methods. In patients with evidence of excessive hemolysis and good regenerative power the spleen is often enlarged. However, the size of the spleen does not run parallel to the degree of hemolysis.

The signs of blood regeneration are the appearance in the circulating blood of young forms of red cells and of a satisfactory number of other marrow elements. In adult life the marrow is the sole red corpuscle forming centre, but it is also the exclusive forming centre for the granular leucocytes and the platelets. These three functions go hand in hand and one is never seriously affected without the other two suffering to some extent, and as frequently happens the changes in the secondarily involved elements is often a valuable index of the function of the organ as a whole. In considering the evidences of regeneration, therefore, we must take into account changes in the leucocytes and platelets as well as in the red cells.

A decrease in the number of leucocytes due to a reduction of the granular cells is an indication of unsatisfactory marrow activity. A rise in the total number of leucocytes and a relative increase in the granular elements suggests improvement in marrow activity.

The number of platelets has the same significance; a decrease indicates unsatisfactory regeneration, an increase improved regeneration. When there is a deficiency of platelet formation the platelets in the blood are not only decreased in number but undergo also changes in appearance, often large, bizarre forms are seen.

Immature red cells are recognized chiefly by basophilia, diffuse and punctate; prominent reticulation, demonstrated by vital staining methods; the presence of nuclei; and increase in the size of the cells, macrocytes. Poikilocytosis and diminution in the size of the cells, microcytes, indicate cells that are being destroyed. A high hemoglobin content of the cells usually indicates marked cell destruction; a falling color index improving regeneration.

If we return to our table of balance between blood destruction and blood regeneration we would expect the blood picture to vary somewhat with each combination.

Marked blood destruction with marked regeneration would be indicated by a normal or slightly subnormal leucocyte count; normal or slightly subnormal polymorphonuclear neutrophile percentage; moderate diminution in platelets; marked poikilocytosis and anisocytosis, marked basophilia, large number of reticulated cells, many blasts, particularly megaloblasts and a moderately high color index. In addition there would be marked urobilin icterus and an increase of urobilin in urine and stools.

Marked blood destruction with poor regeneration would be indicated by a low leucocyte count; low proportion of polymorphonuclear neutrophiles; marked diminution in platelets; marked poikilocytosis and anisocytosis, slight or absent basophilia and reticulation, absence of nucleated forms and a high color index.

Slight, or preferably lessened, blood destruction with marked regeneration would be indicated by a normal leucocyte count with normal proportion of polymorphonuclear neutrophiles; normal number of platelets; marked anisocytosis with predominating macrocytes; no or only slight poikilocytosis; moderate diffuse and punctuate basophilia; normal or somewhat increased proportion of reticulated cells; many nucleated red cells and an approximately normal color index. Urobilin absent in the urine and not increased in the stools.

This outline is highly schematic and actual facts correspond with it only in a general way. For instance when regeneration occurs all of the marrow elements do not respond in the same degree. The leucocytes often increase earlier or more markedly than the platelets; or, the platelets may show an increase earlier or more markedly than the leucocytes; again, the changes in the red cells may be more striking than the changes in the white cells or the plates; some remissions are characterized by the appearance of great numbers of reticulated or basophilic cells; others by the predominance of blasts. We are at present quite unable to fathom the mystery surrounding these various reactions; practically they all have the same significance.

From a single blood examination, by due consideration of these various features of the blood picture, we are often able shrewdly to predict whether the patient is in a stage of remission or in a relapse. However, our predictions on this score are frequently enough wrong and the diagnostic venture must be made with due reservation. The main advantage we seek to draw from such detailed studies is by the comparison of successive observations to gauge the progress of the disease. As yet nothing conclusive can be said about the results of such studies, although interesting details are being recorded. I shall a little later show you charts of such studies made upon patients over a period of many weeks and you will see that the outcome is far from uniform.

In order to explain and if possible to systematize the frequent lack of uniformity between the blood picture and the clinical course of the disease a very artificial conception has been introduced. There must of course be some mechanism by which the bone marrow regulates the discharge of cells into the blood stream. Normally only mature cells are allowed to escape and these in definite proportion. How this mechanism functions and under what conditions its function varies we do not know. At times it seems to break down completely as when occasionally in final stages of pernicious anemia the blood is flooded with nucleated and reticulated red cells, myelocytes and myeloblasts. The presence of these elements ordinarily accompanying a period of active regeneration and forerunning marked clinical improvement in the patient may presage exhaustion of marrow function. It is assumed that the barrier normally opposed to the escape of immature cells may under some conditions be modified. Thus if the marrow is unable to meet a difficult situation by active regeneration it may seek to meet it by removing this barrier at least partially and allowing immature cells to escape. Thus a blood picture which is usually looked upon as indicating a satisfactory marrow response may really represent a frank avowal of failure. It has become customary to speak of such reactions as altered marrow threshold. These reactions are seldom so clear cut as for purposes of description I have here drawn them. They are really a part of the bizarre and remarkable variations that occur in pernicious anemia, and to me it seems that the concept of a marrow threshold has added little to explain or clarify this perplexing situation.

In a word, while these variations in the blood picture are extremely interesting and of growing practical importance, as yet our knowledge of them is not sufficiently ordered to allow us to use this knowledge as a gauge of the value of methods of treatment.

Finally then we are driven against our will to acknowledge that the results of treatment in pernicious anemia have been estimated up to the present and still are being estimated largely upon clinical impressions. I do not mean to deprecate the value of this estimate, but all must admit that it is the least satisfactory standard that could be proposed. It certainly allows the widest latitude to individual opinion and so I shall avail myself of this offered privilege and tell you briefly of the impressions I myself have gathered from many years of observation of the disease.

In the first place I am convinced that the general course of pernicious anemia has not been altered by recently introduced methods of treatment. For fifteen years I watched patients treated with rest in bed, dietery regulation and arsenic. Many of them had remissions of varying duration, but followed for a sufficient length of time all invariably died. I shall show you in a moment a spontaneous remission just as prompt and just as satisfactory as any that follow transfusion. The longest remission I have ever seen, namely, a period of ten years between attacks, occurred in a patient treated in this modest way. The comment is frequently made that such or such a plan of treatment is usually successful in restoring patients with pernicious anemia to health, but that a certain number of patients is stubbornly refractory to this excellent plan. Wonder is expressed as to what fundamental difference separates these two groups. I have solved this difficulty to my entire satisfaction. To my mind the difference consists solely in the time when treatment is given, in other words, "when" treatment is given is a more important factor in success than "what" treatment is given. In nearly all cases of pernicious anemia there are periods when any treatment will be followed by improvement and other periods when every treatment will fail. We have had many patients repeatedly admitted to the hospital who responded excellently to treatment upon the first or first few admissions and then upon a subsequent admission failed completely to show the least improvement to the very methods that had previously given such satisfactory results.

During the past five years I have had ample opportunity to follow the effects of transfusion, of the eradication of foci of infection and of splenectomy. Remissions have been common, just as they had been previously under the simpler treatment, but again all patients followed for a sufficient length of time have invariably died. I have the impression that more desperately ill patients have temporarily recovered especially with the use of transfusion than formerly recovered without it. I was not altogether prepared for the conclusions of Dr. Bloomfield's statistical study, but its general results did not greatly surprise me. I believe that transfusion is sometimes life-saving; that remissions are often hastened by it; that remissions are perhaps at times inaugurated by it. Further than this I should hesitate to go. I cannot quite understand just what those authors mean who deplore that transfusion is reserved as a late remedy in the disease and cry out for its earlier use. Of course, no remedy should be withheld until the patient is beyond being benefited by it, but surely these authors would not advocate transfusing a patient simply because he has pernicious anemia irrespective of the stage of the disease, for instance if a good remission be definitely established.

At the Johns Hopkins Hospital splenectomy in pernicious anemia has been performed but eight times. One patient died of pulmonary embolism nineteen days after operation; three died within a year; two within two years; one after two and a half years; one was alive at the end of one and a half years. Four made good recoveries after operation, but the remissions lasted only from three to eight months in spite of numerous transfusions. Krumbhaar in a recent analysis has computed an operative mortality of twenty per cent. Physicians who advocate splenectomy emphasize the importance of selecting suitable cases. However, the criteria for selection are not very definite. They consist mainly of marked splenic enlargement and the evidence of active hemolysis. Even though we may admit that in such selected cases splenectomy is the most potent means to inaugurate remission, still, if we balance against this possible advantage the formidable nature of the procedure, the high death rate and the transient character of the benefit we will hesitate to urge its acceptance. For these reasons splenectomy in pernicious anemia has been abandoned by the medical clinic of the Johns Hopkins Hospital.

Finally, what is to be said of the value of eradicating foci of infection? Sufficient data are not available to draw a definite conclusion. Sometimes very remarkable improvement follows their eradication; at other times the disease proceeds uninfluenced. As a part of a general plan of treatment it has an important place, as an isolated and special method it is less efficacious than some other methods, particularly transfusion.

CONCLUSIONS.

In conclusion I would state briefly the impression I should like you to carry away from my remarks. Pernicious anemia is inevitably fatal and treatment at best can but promote and prolong the remissions that characterize the natural course of the disease. There is no conclusive evidence to prove that one method of treatment brings on remissions more constantly than another, nor that it more surely prolongs remissions thus begun. We depend solely upon clinical impressions derived from the observation of individual patients for our estimate of the value of treatment. Such observation teaches us that spontaneous remission may be in every way as satisfactory as remission following the use of any method of treatment. In pernicious anemia as well as in all other conditions for which we have only symptomatic or palliative treatment success depends more upon a judicious selection from amongst all available methods of treatment and their proper combination than upon a one-sided advocacy of a single method. Rest, feeding, arsenic, transfusion, the eradication of foci of infection and perhaps also splenectomy have a definite place in the treatment of pernicious anemia. But who shall say which feature of the plan of treatment is the potent influence?

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ILLUSTRATIVE CASES.

Case 1—Illustrating a spontaneous remission.

S. E. Medical No. 41403—Age 53; Male; Black; Married; Gardener. Admitted Nov. 6, 1918; discharged March 9, 1919—Improved.

Diagnosis—Pernicious anemia. Combined sclerosis.

Complaint—Swelling of ankles.

Past History—Unimportant.

Present Illness—Onset Aug., 1917, with coldness, numbness and tingling of feet and hands, followed by some weakness in the hands and legs. In Jan., 1918, in bed 3 weeks with grippe. Says he has never fully recovered from this illness. In March, 1918, swelling of feet and ankles, increasing weakness and shortness of breath. In Aug., 1918, onset of dizziness. Shortly before admission, fullness and distress in the abdomen. Swelling of feet and ankles has increased and walking has become more and more difficult.

Examination—Fairly well nourished; evidently some loss of weight. No dyspnea as he lies quietly in bed. Moderate edema of ankles. *Head*—Shows no abnormality except marked oral sepsis and striking papillary atrophy of the tongue. No glandular enlargement. *Lungs*—Show no noteworthy abnormality. *Heart*—A little enlarged, cardiac dullness measuring 4 cm. to right and 11 cm. to left of median line. Systolic murmur at apex. Pulse slow and regular; marked sclerosis of the radials. *Liver* extends 3 f.b. below C. M. *Spleen*—Not palpable. Lower extremities show moderate spasticity with hyperactive reflexes. There is well marked ataxia and loss of muscle sense. Wassermann reaction negative. Gastric contents show an absence of hydrochloric acid. Stools show no abnormality. Spinal fluid normal. Phthalein test: 56% excreted in 2 hours. *Urine*—Normal range of specific gravity; no albumin; no sugar; no casts.

On admission the patient's temperature was somewhat elevated, ranging between 97° and 100°. This irregular temperature elevation persisted until the last six weeks of the patient's stay in the hospital, during which period it was normal.

Table No. 1 shows course of disease during patient's stay in hospital.

Case 2—Illustrates a rapid spontaneous remission.

F. J., Age 40; Male; White; Married. Coal Miner. Admitted March 7, 1919.

Complaint—Weakness, liver and blood trouble.

Family History—Irrelevant.

Past History—Unimportant. Always well up to the present illness.

Present Illness—Onset two years before admission with weakness and shortness of breath.

TABLE No. 1

DATE	11-7-18	11-18-18	11-21-18	11-23-18	12-3-18	12-8-18	12-10-18	12-15-18	12-20-18		12-28-18	1-7-19	1-17-19	2-1-19	2-17-19	3-7-19
R. B. C.	1,744,000	1,404,000	Transfusion, 400 cc.	1,752,000	1,480,000	Subjective Improvement Began	1,976,000	2,280,000	2,500,000	Chill, with Temperature 106°	2,628,000	3,392,000	4,128,000	4,376,000	4,540,000	4,520,000
W. B. C.	4,080	3,120		4,000	4,600		6,160	7,400	12,500		7,600	9,000	7,200	6,880	7,160	8,400
Hb.	40%	24%		30%	25%		30%	40%	45%		44%	52%	54%	59%	65%	69%
C. I.	1.17	0.89		0.89	0.9		0.8	0.9	0.9		0.9	0.8	0.66	0.68	0.71	0.77
Marrow Cells	62.8%	64.8%		80.4%	67.0%		64.0%	81.2%	81.0%		72.0%	70.4%	68.0%	60.0%	65.0%	65.6%
Lymph.	31.2%	27.6%		15.6%	24.0%		26.4%	13.6%	5.6%		18.0%	16.6%	24.0%	33.0%	30.3%	27.0%
Trans.	6.0%	7.2%		3.2%	5.0%		8.0%	5.2%	8.8%		10.0%	10.0%	8.0%	7.0%	4.7%	7.4%
Blasts	0	4		2	0		0	0	0		0	0	0	0	0	0
Macrocytes	Many	Many		Many	Many		Many	Many	Few		Few	Few	Few	Few	Few	Few
Microcytes	Many	Many		Few	Few		Few	Many	Few		Moderate	Few	Few	Few	Few	Few
Poikilocytes	Many	Many		Few	Many		Few	Moderate	Few		Few	Few	Few	Few	Few	Few
Basophilia	0	+		+	0		+	+	+		0	0	0	0	0	0
H.-C. Bodies	0	0		0	0		0	0	0		0	0	0	0	0	0
Retic. Cells	....	1.2%		2%	1.2%		1.6%	5.2%	3.2%		3.8%	3.4%	3.5%	....	....	0.5%
Platelets	Few	Few		Few	Few		Many	Few	Few		Many	Many	Many	Normal	Normal	Normal
Fragility	....	....		....	....		....	....	....		....	....	....	....	....	....
Urobilin	0	0		0	0		0	....	....		....	....	....	....	....	....
Destr. Index	....	32		20	22		4	1.15	1.5		1.34	1.4	1.5	....	....	2.5

Remarks

Explanation of abbreviations and terms used in the table:

R. B. C. = Red Blood Cells. W. B. C. = White Blood Cells. Hb. = Hemoglobin. C. I. = Color Index. Marrow Cells = Polymorphonuclear Neutrophiles, Eosinophiles, Basophiles and Myelocytes. Lymph. = Large and Small Lymphocytes. Trans. = Transitionals and Large Monoculear Cells. Blasts = Nucleated Red Cells. H.-C. Bodies = Howell-Cabot Bodies. Retic. Cells = Reticulated Cells. Fragility = The Salt Solution Concentration at which Hemolysis begins and at which it is complete. Destr. Index = Destruction Index, i.e., the number of Reticulated Cells divided into the number of Poikilocytes.

Since then the patient has gradually become weaker and the shortness of breath has increased. Palpitation of the heart, dizziness and vertigo have developed. Some swelling of the feet occasionally.

Examination—Sparely nourished. Some loss of weight. Very pale with yellowish tinge to skin. Head shows no abnormality, except oral sepsis and papillary atrophy of the tongue. Lungs are clear. Heart not enlarged. Systolic murmur at the apex. Abdomen shows no noteworthy abnormality. Liver and spleen not enlarged. Reflexes hyperactive.

Wassermann negative. Urine: no abnormality, except positive test for urobilin which subsequently became negative.

Course in Hospital: Without any treatment other than rest in bed and liberal diet the patient's condition improved and a very satisfactory remission was established.

Table No. 2 shows the changes in the patient's blood.

Case 3—Illustrates a slow spontaneous remission. No improvement followed the transfusion.

J. B. J. Medical No. 41470—Age 41; Male; White; Married; Contractor. Admitted Jan. 20, 1919; discharged March 22, 1919. Result—Improved. Diagnosis: Pernicious anemia.

Family History—Unimportant.

Past History—The patient was in the Johns Hopkins Hospital from Jan. 29, 1918, to Aug. 23, 1918. The physical examination at that time was the same as on the present admission. The blood showed Hb. 72%; R. B. C. 2,300,000; W. B. C. 3,800. With rest in bed, proper dietary measures and two transfusions, the patient's condition improved, and on discharge from the hospital the blood showed Hb. 88%; R. B. C. 3,680,000; W. B. C. 5,200.

Present Illness—Onset of illness about 6 yrs. ago, with weakness, followed by shortness of breath and yellowish tinge of the skin. During the following two years, periods of improvement, followed by recurrence of his symptoms. Gradual loss of 60 lbs. in weight. Four years ago a diagnosis of pernicious anemia was made. At that time he had weakness, dizziness, ringing in the ears, loss of appetite, severe diarrhea, and numbness of the fingers. With rest, forced feeding and Fowler's solution there was marked improvement, soon followed, however, by recurrence of the previous symptoms. During the past three years the patient has remained at home, resting, and taking Fowler's solution off and on. For brief periods the patient would feel perfectly well and then all of his aforementioned symptoms would recur. After leaving the hospital in August, he remained well for about two months, when the diarrhea recurred, followed by

TABLE No. 2

DATE	3-7-19	3-19	3-30	4-5	4-9	4-13	4-15	4-17	4-24
R. B. C.	852,000	1,000,000	1,600,000	1,808,000	2,920,000	3,128,000	3,256,000	3,744,000	3,656,000
W. B. C.	6,480	6,400	4,000	5,300	5,680	6,440	5,880	5,720	6,440
Hb.	18%	22%	22%	32%	60%	65%	70%	75%	78%
C. I.	1.06	1.1	....	....	....	....	.99*	1*	....
Marrow Cells	52.6%	57%	54%	22.8%	39.3%	50.5%	42%	48%	69.9%
Lymph.	40.7%	30%	40%	64.4%	50.7%	38%	49%	42.5%	24.3%
Trans.	6.6%	5%	6%	9.6%	10%	11.5%	9%	9.5%	5.5%
Blasts	1	0	6	0	0	0	1	0	0
Macrocytes	Many	Many	Many	Many	Many	Many	Few	Few	Few
Microcytes	Many	Many	Many	Many	Many	Many	Few	Few	Few
Poikilocytes	++++	11.8%	4.7%	4.2%	5.7%	1.8%	4.9%	....	....
Basophilia	Slight	Slight	....	0	0	0	0	0	0
H.-C. Bodies	0	0	0	0	....	0	0	0	0
Retic. Cells	....	2.4%	3%	....	1.5%	2.7%	0.6%	....	....
Platelets	Few	Few	....	Normal	Decreased	Normal	Normal	Normal	Normal
Fragility	....	.5—.35	....	.35	....	....	....	....	....
Urobilin	....	+	....	....	....	0	0	0	....
Destr. Index	....	4.0	1.6	....	3.8	....	....	....	....

TABLE No. 3

DATE	7-29-18	1-22-19	1-25-19	1-26-19	2-1-19	2-9-19	2-24-19	3-2-19	3-11-19	3-13-19	3-16-19	3-18-19
R. B. C.	2,300,000	2,244,000	Transfusion, 625 cc.	2,348,000	1,796,000	2,592,000	2,496,000	2,064,000	3,016,000	3,456,000	3,824,000	3,660,000
W. B. C.	3,800	3,640		2,380	3,200	4,240	2,000	3,920	3,560	3,560	3,640	5,000
Hb.	72%	63%		65%	60%	55%	67%	65%	70%	80%	68%	78%
C. I.	1.5	1.4		1.39	1.76	1.02	1.5	1.6	1.1	1.18	0.9	0.94
Marrow Cells	42%	55.3%		64%	48.0%	62.0%	70.4%	68.8%	62.8%	84%	60.2%	54%
Lymph.	45%	39.3%		31%	48.3%	36.5%	26.4%	27.6%	31.2%	12.8%	38.2%	43.3%
Trans.	4%	2%		5%	3.7%	1.5%	3.2%	3.6%	6%	3.2%	1.6%	2.8%
Blasts	0	1		0	0	0	1	0	1	0	0	0
Macrocytes	+	+++		+++	+++	+++	++++	++++	++	++++	++++	+++
Microcytes	Few	+		+++	++	++	++++	++++	++	+++	++++	+++
Poikilocytes	....	12.5%		2%	5%	5.5%	3%	3%	3.5%	3%	2.5%	1.5%
Basophilia	....	*		0	0	0	0	0	0	0	0	++
H.-C. Bodies	....	0		0	0	0	0	0	0	0	0	0
Retic. Cells	....	0.3%		0.7%	1.1%	1.3%	1.5%	0.5%	2.3%	1.0%	1.5%	0.5%
Platelets	Few	Few		Decreased	Decreased	Decreased	Few	Few	Decreased	Decreased	Decreased	Decreased
Fragility	....	.44—.35		.44—.35	.46—.35	.44—.35	....	....	....	....	....	....
Urobilin	....	0		0	0	0	0	0	0	0	0	0
Destr. Index	....	42.7		28.5	4.54	4.23	2	6	1.75	3	1.6	3

shortness of breath, weakness, loss of memory and numbness of the hands.

Examination—Showed a well-nourished man of pale skin with yellowish tint; extreme pigmentation over the chest. *Head* shows no abnormality. *Lungs* are normal. *Heart*—Normal in size; sounds clear. Pulse slow and regular. *Abdomen* shows no abnormality. Liver not enlarged. Spleen barely felt on deep inspiration. *Wassermann* reaction negative. *Gastric analysis* showed a hydrochloric acid deficit of 20. *X-ray* of the sinuses showed slight clouding of the left antrum. *Urine* showed a normal range of specific gravity; no albumin; no sugar; no casts.

The temperature was practically normal throughout the stay in the hospital, except for a moderate rise following transfusion.

Table No. 3 shows course of disease during patient's stay in hospital.

Case 4—Illustrating step-like improvement following transfusions.

W. S. A. Medical No. 39947—Age 33; Male; White; Married; Farmer. Admitted May 27, 1918. Discharged July 8, 1918—Improved. Diagnosis: Pernicious anemia.

Complaint—Stomach trouble and indigestion.

Family History—Unimportant.

Past History—Unimportant.

Present Illness—Onset in January, 1918, with cramps and jerking sensation in the legs. Gradual loss of strength and increasing pallor of the skin. Numerous digestive disturbances consisting mainly of nausea and occasional vomiting. Recently dizziness, pain in the head and increasing weakness. Marked loss of weight.

Examination—Marked emaciation; subicteric tint to the skin; scaphoid abdomen. Examination of the head shows no noteworthy abnormality except for papillary atrophy of the tongue. The lungs are clear. The heart is normal in size. Sounds are clear. Pulse regular, no sclerosis. Blood pressure is 110/75. Knee jerks obtained on reinforcement. No gross sensory disturbances.

Blood on admission: Hb. 40%. R. B. C. 980,000. W. B. C. 2,500. P. M. N. 67%. Very few platelets. Marked anisocytosis and poikilocytosis. No blasts.

Urine: Trace of albumin on admission. Small amount of urobilin. Subsequently albumin disappeared and test for urobilin became negative.

Wassermann reaction: Negative. Achylia Gastrica.

Course in the hospital: During the first two weeks in the hospital with rest and appropriate diet no improvement in the condition. Three transfusions, each followed by marked improvement. During the course in the hospital constantly a little elevation of temperature, ranging from 98 to 100°.

On discharge: Hb. 82%. R. B. C. 4,696,000. W. B. C. 6,400. P. M. N. 69%. Platelets increased but still much below normal. Slight anisocytosis and poikilocytosis. Two nucleated red cells.

Chart No. 1

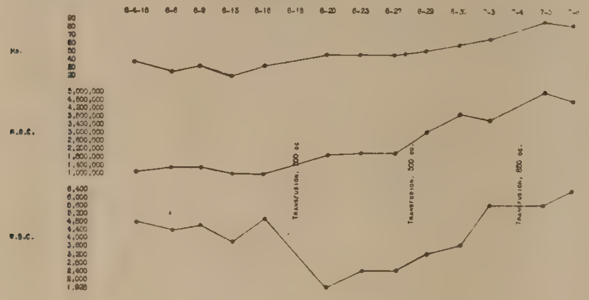


Chart No. 1 shows the improvement in the blood.

Case 5—Illustrates a remission apparently inaugurated by a single transfusion.

S. C. Medical No. 38756—Age 65; Female; White; Married. Housework. Admitted Oct. 9, 1917. Discharged Nov. 24, 1917—Improved. Diagnosis: Pernicious anemia.

Complaint—Weakness and tingling sensation in the legs.

Family History—Unimportant.

Past History—Unimportant. Always in good health until onset of present illness.

Present Illness—Onset in August, 1918, with weakness which has grown progressively more marked. At present scarcely able to walk. Increasing shortness of breath. Feels sleepy and drowsy. Attacks of dizziness and noises in the ear. Throbbing of the heart on exertion. Pains in the abdomen. Tingling sensation in the legs.

Examination—Well nourished. Slight lemon yellow tint to the skin. Mucous membranes very pale. Examination of the head shows no abnormality, except papillary atrophy of the tongue. Teeth: all absent. No glandular enlargement. Lungs are clear. Heart slightly enlarged to right and left. Sounds clear. Pulse is regular, no marked sclerosis. Blood pressure is 120/60. The abdomen shows no noteworthy abnormality except that the liver extends a little below the costal margin. Spleen not enlarged.

Blood: Hb. 25%. R. B. C. 1,352,000. W. B. C. 6,100. P. M. N. 56%. Platelets markedly reduced. Moderate anisocytosis and poikilocytosis. Small number of blasts.

Gastric contents: Achylia Gastrica.

Urine: Trace of albumin. Few casts. On admission a trace of urobilin, subsequently none.

Course in the hospital: A well marked remission which apparently was inaugurated by a transfusion.

On discharge: Blood, Hb. 72%. R. B. C. 3,912,000. W. B. C. 7,000. P. M. N. 50%. Platelets about normal. Slight anisocytosis and poikilocytosis. A few nucleated red cells.

Chart No. 2 shows course of disease during patient's stay in hospital.

Case 6—Illustrates a satisfactory spontaneous remission on the first admission to the hospital, no response to transfusion on the second admission.

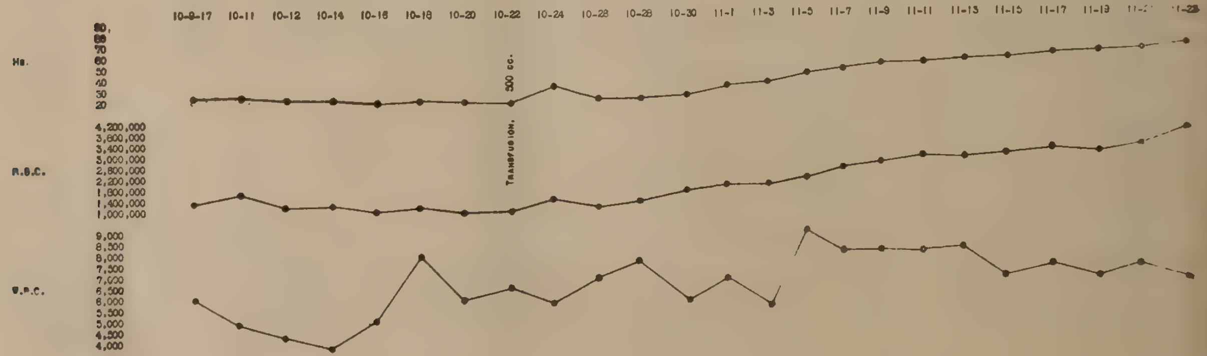
N. R. Medical No. 39880—Age 51; Male; White; Married. Editor. Admitted April 15, 1918. Discharged June 26, 1918—Improved. Diagnosis: Pernicious anemia.

Complaint—Weakness, loss of weight.

Family History—Unimportant.

Past History—Unimportant.

Chart No. 2



Present Illness—Onset in September, 1916, with weakness and general feeling of languor. Gradually grew pale. Weakness increased and shortness of breath developed. Shortly after onset swelling of the ankles, which has disappeared and has not returned. Some numbness and tingling in the hands and feet. Feeling of constriction in the abdomen after meals.

The patient entered the Johns Hopkins Hospital first on May 17, 1917, was discharged July 20, 1917. On admission the blood showed: Hb. 35%. R. C. B.: 1,936,000. W. C. B.: 5,200. P. M. N. 50%. Small number of platelets. Marked anisocytosis and poikilocytosis. Few blasts. Moderate basophilia. During the two months that the patient was in the hospital his condition gradually improved, so that on discharge his blood showed: Hb. 70%. R. B. C. 3,168,000. W. B. C. 3,900. A number of infected teeth were removed. After leaving the hospital July 20, 1917, the patient returned to work, but was obliged to give it up promptly on account of weakness. In December an examination of the blood by his home physician showed that anemia had returned and he was advised to rest. In March his red cell count is said to have been 2,030,000. After that the count dropped to 1,385,000 and weakness and numbness and tingling of the extremities had returned.

Examination—April 17, 1918. The patient is pale and thin. Slight yellow tinge to the skin. The head shows no important abnormality, except papillary atrophy of the tongue. Lungs and heart clear. Abdomen negative, except that the spleen is felt.

Blood: Hb. 35%. R. B. C. 1,440,000. W. B. C. 3,320. P. M. N. 58%. Platelets almost completely absent. Marked anisocytosis and poikilocytosis. Small number of blasts. Moderate basophilia.

Wassermann reaction: Negative. Achylia Gastrica.

Urine: Trace of albumin, no casts, no definite reaction of urobilin.

The patient's condition showed only very temporary improvement after two transfusions.

Blood count on discharge, June 26, 1918: Hb. 35%. R. B. C. 1,760,000. W. B. C. 2,400. P. M. N. 55%. Platelets greatly diminished. Marked poikilocytosis and anisocytosis. No blasts. No basophilia.

Subsequent inquiry discloses that the patient grew progressively worse after leaving the hospital and died in September, 1918.

Chart No. 3 shows the changes occurring in the blood.

Case 7—Illustrates recovery from a desperate condition.

E. B. Medical Nos. 39199 and 39998—Age 28; Male; Black; Married. Laborer. Admitted December 13, 1917. Discharged March 3, 1918—Improved. Diagnosis: Pernicious anemia.

Complaint—Weakness and heart trouble.

Family History—Unimportant.

Past History—Unimportant.

Present Illness—Onset of symptoms three months before admission with weakness. Weakness has rapidly increased and the patient has become short of breath. Loss of appetite with constipation. Diarrhea for two weeks. Occasional vomiting.

Examination—Emaciated. Profoundly anemic. Mentally confused. Marked papillary atrophy of the tongue. Oral sepsis. Lungs clear. Heart not enlarged. Loud systolic murmur. Abdomen: Liver felt a little below the costal margin. Spleen not enlarged. No glandular enlargement. Reflexes normal.

Blood: Hb. 20%. R. B. C. 900,000. W. B. C. 7,500. P. M. N. 68%. Platelets markedly reduced. Extreme poikilocytosis and anisocytosis. Well marked diffuse basophilia and less marked punctate basophilia. Many blasts.

Urine: Trace of albumin. Few casts. Urobilin reaction marked on admission.

The patient had four transfusions during his stay in the hospital and on discharge the blood showed: Hb. 47%. R. B. C. 3,100,000. W. B. C. 8,200. P. M. N. 70%. Marked diminution in the number of platelets. Marked anisocytosis and poikilocytosis with marked large macrocytes. Diffuse basophilia. No blasts. The patient was admitted to the hospital again on June 15, 1918, and discharged on July 17, 1918.

After leaving the hospital in March the patient

CHART NO. 3

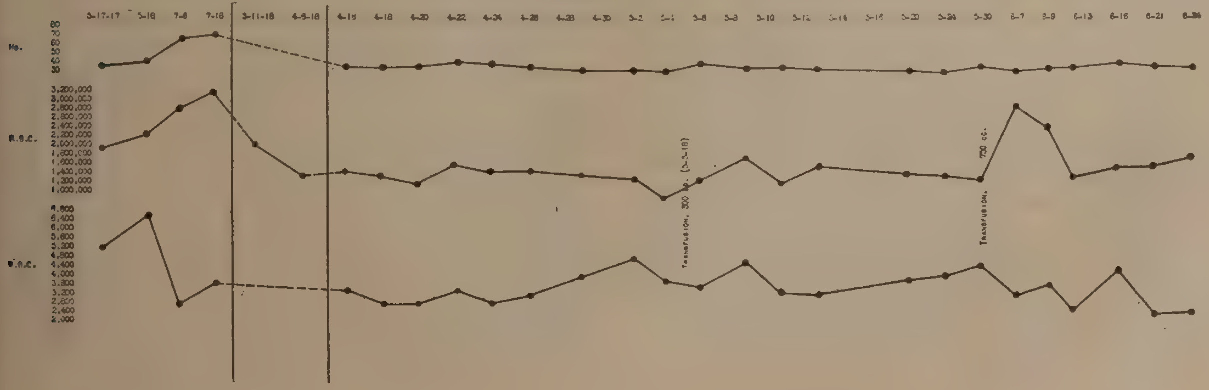
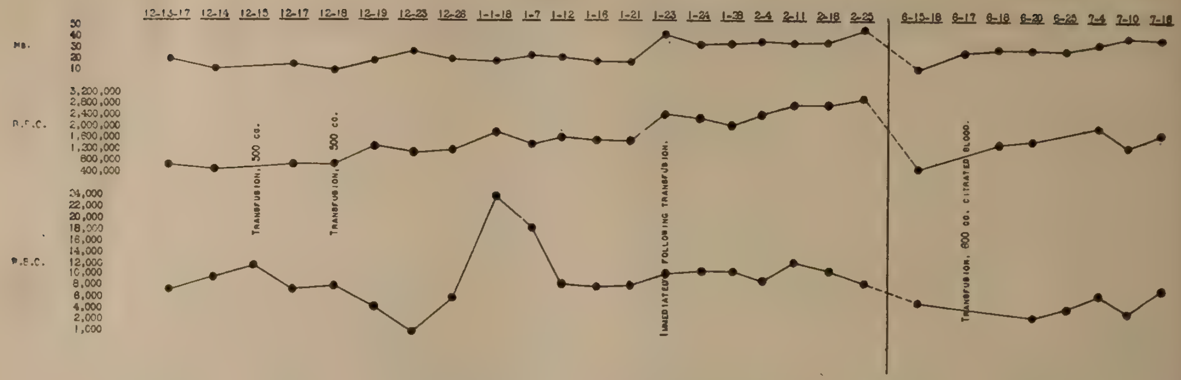


Chart No. 4



tried to work, but weakness and shortness of breath immediately returned. The patient remained quietly at home but grew gradually weaker and weaker.

On admission blood showed: Hb. 13%. R. B. C. 548,000. W. B. C. 5,240. P. M. N. 72%. Platelets almost entirely absent. Marked anisocytosis and poikilocytosis. No basophilia.

The patient received two transfusions, and on discharge the blood showed: Hb. 40%. R. B. C. 1,885,000. W. B. C. 7,600. P. M. N. 65%. Platelets much increased in number. Marked anisocytosis, but only slight poikilocytosis. The patient was discharged on account of unruly conduct.

Chart No. 4 shows the changes occurring in the blood.

Case 8—Illustrates gradual improvement following a single transfusion.

N. E. C. Medical No. 39995—Age 64; Male; White; Married; Musician. Admitted June 19, 1918. Discharged July 17, 1918—Improved. Diagnosis: Pernicious anemia.

Complaint—Weakness, shortness of breath.

Family History—Unimportant.

Past History—Unimportant, always healthy before onset of the present illness.

Present Illness—Onset five months before admission, following an attack of tonsillitis. Gradually increasing weakness, shortness of breath and palpitation. Some swelling of the feet for the past two months. Obliged to go to bed six weeks ago on account of increasing weakness. Gradual loss of weight during the past three years.

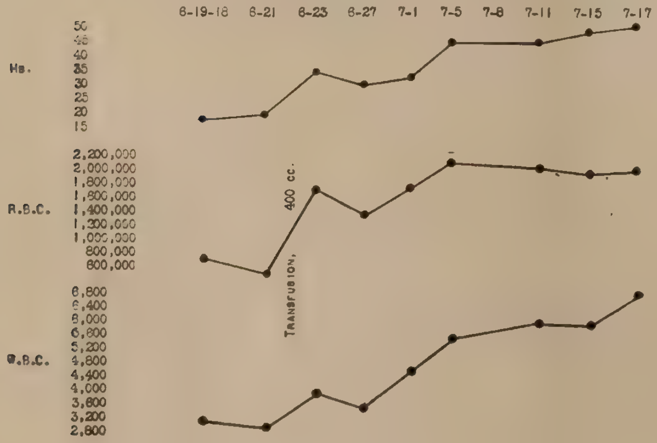
Examination—Fairly well nourished man. Evident loss of weight. Marked pallor of the skin and mucous membranes, and a lemon yellow tint to the skin. Examination of the head shows no important abnormality. A few small cervical glands palpated. Lungs show no abnormality except a slight grade of emphysema. The heart is not enlarged. Sounds normal except for a soft systolic murmur. Pulse regular, no marked sclerosis. Blood pressure 115/50. Abdomen shows no abnormality. Liver and spleen not enlarged. Reflexes normal.

Blood: Hb. 18%. R. B. C. 746,000. W. B. C 3,200. P. M. N. 65%. Platelets markedly diminished. Marked anisocytosis and poikilocytosis. Gradual improvement following a single transfusion.

On discharge: Blood. Hb. 51%. R. B. C. 2,048,000. W. B. C. 6,800. P. M. N. 69%. Platelets abundant. Moderate anisocytosis and poikilocytosis. Moderate basophilia. Few blasts. A letter from the patient dated August 5, 1918, reports the following account: Hb. 57%. Red cells 3,000,000. Leukocytes 5,500. P. M. N. 52%.

Chart No. 5 shows the changes occurring in the blood.

Chart No. 5



Case 9—Illustrates marked temporary improvement after removal of focus of infection (cholecystitis).

E. B.—Age 74; Male; White; Married; Occupation, none.

Complaint—Weakness and loss of weight.

Present Illness—Onset insidiously during the summer of 1917 with weakness, gradually increasing shortness of breath and pallor of the skin.

Examination—October 29, 1917. Fairly well nourished. Some loss of weight. Very pale, with marked yellowish tinge to the skin. Oral sepsis. No glandular enlargement. Lungs show diffuse bronchitis. Heart a little enlarged, systolic murmur. Pulse regular, moderate arteriosclerosis. Blood pressure 156/74. Abdomen: Liver and spleen not enlarged. Urine shows trace of albumin and few casts.

TABLE No. 4 MAJOR E. BERGLAND

DATE	10-29-17	11-6-17	11-14-17	11-20-17	11-24-17	12-1-17	12-6-17	12-7-17
Hb.	37%	34%	32%	Transfusion 500 cc.	37%	37%	Transfusion 500 cc.	46%
R. B. C.	1,688,000	1,960,000	1,288,000		1,624,000	1,792,000		2,104,000
W. B. C.	9,200	7,040	5,800		8,320	5,400		6,400
DATE	**12-18-17**	**12-26-18**	**1-5-18**	**1-13-18**	**1-16-18**	**1-16-18**	**1-22-18**	**1-28-18**
Hb.	44%	44%	42%	40%	Transfusion 1900 cc.	60%	55%	49%
R. B. C.	1,944,000	1,728,000	1,764,000	1,612,000		2,840,000	2,440,000	2,288,000
W. B. C.	5,200	5,000	3,800	4,200		4,800	3,800	2,400
DATE	**2-4-18**	**2-5-18**	**2-9-18**	**2-18-18**	**2-27-18**	**3-2-18**	**3-4-18**	**3-11-18**
Hb.	48%	Transfusion 1000 cc.	55%	48%	40%	Transfusion 1200 cc.	Attack of gall stone colic	Transfusion 700 cc.
R. B. C.	2,264,000		2,576,000	2,196,000	1,728,000			
W. B. C.	Not given		3,200	2,400	Not given			
DATE	**3-12-18**	**3-14-18**	**3-15-18**	**3-17-18**	**3-19-18**	**4-27-18**	**3-27-18**	**3-29-18**
Hb.	37%	Transfusion 1800 cc.	75%	Transfusion 1200 cc.	Cholecystotomy	66%	Transfusion 1200 cc.	75%
R. B. C.	1,824,000		3,096,000			2,132,000		3,428,000
W. B. C.	3,000		4,000			Not given		4,200
DATE	**4-7-18**	**4-14-18**	**6-3-18**	**9-30-18**	**10-14-18**	**10-16-18**	**11-3-18**	....
Hb.	82%	81%	58%	55%	35%	Transfusion 500 cc.	Transfusion patient died	....
R. B. C.	3,892,000	3,712,000	3,712,000	2,396,000	1,670,000			....
W. B. C.	Not given	5,200	9,200	7,700	5,200			....

Patient entered the Johns Hopkins Hospital November 5, 1917, and was discharged November 24, 1917.

Gastric analysis showed achylia gastrica. Wassermann reaction negative. Gastro-intestinal X-ray examination showed no noteworthy abnormality. Urological examination: Prostatic hypertrophy with slight obstruction. Four teeth showing root abscesses were removed. After leaving the hospital the patient made no further improvement. There was gradual loss of weight and marked digestive disturbances. His blood was maintained at a reasonably satisfactory level with repeated transfusions. Early in March, 1918, the patient had an acute attack of gallstone colic. He was admitted to the hospital March 11, 1918, and on March 19 cholecystotomy was performed. A number of gallstones were removed from the gall bladder. The gall bladder was drained and the patient made an uneventful recovery. Following the patient's operation he improved in a very remarkable way and his blood remained at a high level. All during the winter he had been almost completely bedridden. He now began to go about actively and spent the summer in the North. Towards the end of August shortness of breath, weakness and pallor again came on and the patient was transfused a number of times at Montreal. He returned to Baltimore the end of September and was admitted again to the Johns Hopkins Hospital on October 3. A transfusion of blood was done and the patient left the hospital immediately after. Following this transfusion no improvement occurred, and the patient died at his home on November 3, 1918, while a transfusion was being given.

Table No. 4 shows the change in the blood count.

TRANSFUSION OF CITRATED BLOOD—TECHNIC AND INDICATIONS.*

By RICHARD LEWISOHN, M.D., F.A.C.S.
NEW YORK CITY

BLOOD transfusion has been put on a safe basis, since we have learned that human blood can be classified into four groups, and that serious risks for the life of the recipient can be avoided only if donor and recipient belong to the same group. The tests for hemolysis and agglutination safeguard against any possible serious accident. Formerly every transfusion of blood presented a grave risk to the life of the recipient. Nowadays a transfusion of blood, if proper quantities are transfused, is an absolutely safe procedure without any risk, either for the donor or for the recipient.

Up to a few years ago the technic of blood transfusion was most cumbersome. Vessel anastomosis (either artery to vein or vein to vein) required a skillful surgeon, specially trained in vessel surgery, for its proper performance. Such men were often not readily available. For this reason blood transfusion was not resorted to as often as the welfare of the patient required.

Recent years, however, have brought an absolute change in this state of affairs. Transfusion of blood, formerly one of the most complicated procedures in surgery, is now one of the simplest. The development toward simplification of the method had been a rapid one, accomplished in a few years. The syringe method of Lindeman, the paraffinized glass cylinders of Kimpton and Brown, and the double way stop-cock of Unger, as they were introduced in this chronological order—each one of these means a step forward toward simplification of blood transfusion.

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* Read at the Annual Meeting of the Medical Society of the State of New York, at Syracuse, May 7, 1919.

And yet all these methods appear complicated in comparison with the latest method, and we can safely say the most popular method at the present time—the citrate method.

This method is fundamentally different from any other transfusion method heretofore employed, inasmuch as it makes use of a chemical, in order to prevent coagulation of the blood during the transfer from donor to recipient. The idea of mixing the donor's blood with an anti-coagulant is by no means a new one. However, it seems that all previous attempts failed, because the substances emproved were toxic, when used in infinitesimal doses, or because the amount deemed necessary to make a large transfusion possible reached beyond the margin of safety.

None of the anti-coagulants (sodium phosphate, oxalate, citrate, etc.) are absolutely atoxic. They had all been tried and found to be toxic, when given intravenously in large quantities.

The experimental work which I started in August, 1914, and the results of which I published in conjunction with reports on two human blood transfusions in January, 1915, showed for the first time that a minute dose (0.2 per cent) of sodium citrate is sufficient to prevent coagulation of the blood for forty-eight hours. These experiments furthermore showed that the maximal dose, which can be safely injected intravenously into the adult, is five grams.

At exactly the same time (January, 1915) Agote (Buenos Ayres) published an article on the same subject. His dose is practically identical with that which I advised. He assembled three cubic centimeters of a 25 per cent solution of sodium citrate at the bottom of the glass receptacle, before commencing to collect the blood. This very strong concentration would destroy vital elements of the blood, when the blood begins to mix with the citrate solution and thus cause spontaneous agglutination of red blood cells.

Agote's article does not report any experimental work on the very interesting problems involved in this question. He simply states that he gave small transfusions of citrated blood (300 cubic centimeters) to two patients. His work did not answer the question, whether transfusions of average size (500 to 700 cubic centimeters) could be given with this method without causing toxic effects. Furthermore he did not study the effect of anti-coagulants on the coagulation time of the recipient. For these reasons Agote's work cannot deserve more than a certain historic interest.

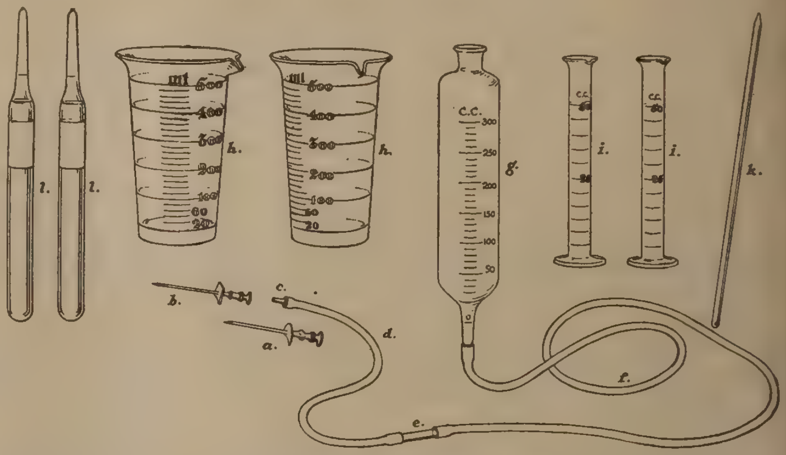

Fig. 1.—Complete Outfit for Transfusion of Blood with the Aid of Sodium Citrate.

a and *b*, Cannulæ; *g*, salvarsan flask with rubber (*d f*) glass taper connect (*e*) and adapter (*c*); *i*, small glass jars; *h*, two large glass jars; *k*, glass rod; *l*, two glass ampoules containing 50 ccm. of a sterilized 2.5% solution of sodium citrate.

The technic of transfusion of citrated blood, as described in my original communication, consists of two separate steps: (1) The taking of the blood from the donor, and (2) the injection of the citrated blood into the recipient. Both steps are well known to any physician and do not require any special skill. The first step represents a simple venesection; the second step, an intravenous infusion.

Outfit for Citrate Transfusion (Fig. 1).

The complete outfit for a citrate transfusion consists of the following instruments:

(1) 2 glass ampoules, each containing 50 c.c. of a 2.5 per cent sterile solution of sodium citrate.

(2) 2 large graduated glass jars (500 c.c. each).

(3) 2 small graduated glass jars (50 c.c. each).

(4) 1 glass rod.

(5) 1 salvarsan flask.

(6) 2 cannulæ (1 large size and 1 medium size).

Taking the Blood from the Donor (Fig. 2).

The donor ought to be a strong, husky man, with large, easily visible veins of the arm. Though members of the patient's family may

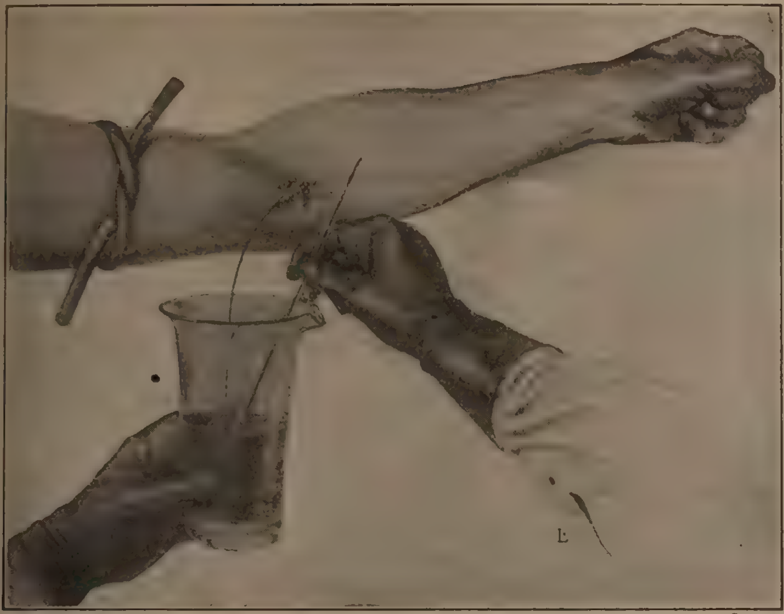

FIG. 2—TAKING BLOOD FROM THE DONOR.

act as donors in emergencies, the professional donor is preferable. The donor's blood ought to be examined for syphilis, and donor's and recipient's blood must be tested for hemolysis and agglutination. The donor's blood is obtained by puncture of one of his arm veins. The cannula used for the collection of the blood must have a large calibre in order that the blood runs out fast, otherwise clotting may occur before the blood is properly mixed with the citrate solution.

I have repeatedly collected 900 cubic centimeters of blood by simple puncture of a vein. I personally do not believe in very large transfusions, and for that reason have not taken more than 900 cubic centimeters from a donor by simple puncture. Others, however, have collected 1,200-1,300 cubic centimeters by this method.

The donor will offer his services much easier, if the method to be applied safeguards his immediate return to work. For this reason no method of blood transfusion can acquire general popularity, which requires incision and exposure of the donor's vein. Another important consideration is that, if puncture is used, the same vein can be used repeatedly.

The average transfusion consists in transferring 500 cubic centimeters of blood from donor to recipient. The ampoule is emptied into one of the fifty-cubic-centimeter jars. From this jar, 25 cubic centimeters are poured into the large glass jar. A tourniquet is applied to the donor's arm and one of the prominent veins is punctured. The blood is mixed with citrate solution, by gently stirring with a glass rod. After 250 cubic centimeters of citrated blood are collected, the residual 25 cubic centimeters required for the proper citration of 500 cubic centimeters of blood, are added. The cannula is then removed and the small puncture opening is covered with a piece of gauze.

INJECTION OF THE CITRATED BLOOD INTO THE RECIPIENT (FIG. 3).

The introduction of the citrated blood into the recipient resembles so closely an intravenous infusion that it hardly needs any explanatory remarks. If the recipient's vein is clearly visible, puncture of the vessel with a medium-sized cannula is the method of choice. However, the majority of patients are so anemic that the vein has to be exposed by a small incision. The cannula is then attached to the salvarsan apparatus and 50

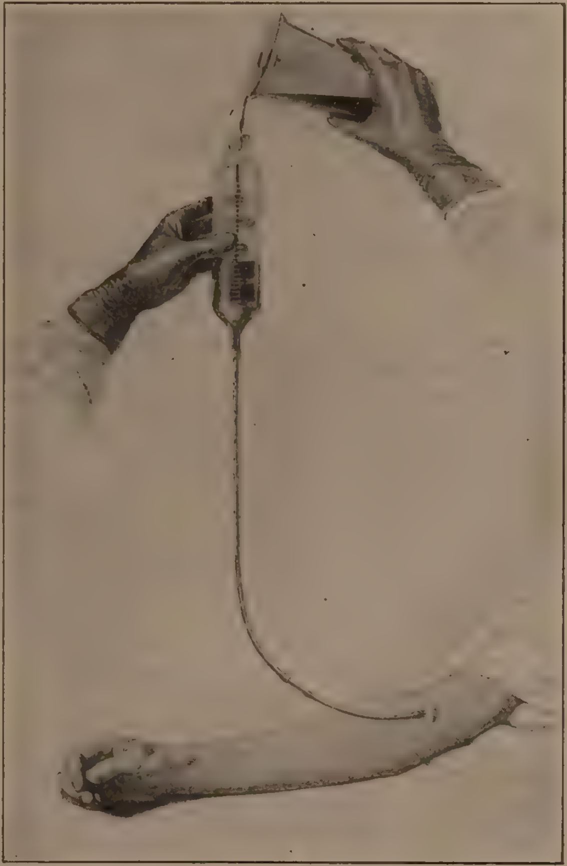

FIG. 3.—INFUSION OF CITRATED BLOOD INTO THE RECIPIENT.

cubic centimeters of saline solution are allowed to run in, immediately followed by the citrated blood. The preliminary injection of a small quantity of saline solution has the advantage of safely eliminating air, contained in the rubber tubing, without wasting any of the donor's blood.

Indications and Results.

The citrate method of blood transfusion was received with a certain amount of skepticism. The idea of introducing an anti-coagulant into the circulatory system in the attempt to stop hemorrhages did not appeal to many people. However, it has been shown that all these objections were purely theoretical. In fact, the coagulation time of the recipient's blood is temporarily shortened after the introduction of the citrated blood (Weil). It returns to its previous ante-transfusion level in about twenty-four hours. Thus citrate transfusion can be safely used wherever transfusion is indicated, even in hemorrhagic diseases (hemophilia, purpura, etc.).

The number of citrate transfusions is growing rapidly in this country. Pemberton (Mayo Clinic) lately has reported 1,000 transfusions done by this method, Garbat has reported 100, and the author 200 transfusions. In none of these 1,300 transfusions has the mixture of sodium citrate with the donor's blood caused any ill effects on the recipient. The clinical value of citrated blood is as beneficial as that of non-citrated blood.

The indications for transfusion can be divided into four groups:

1. Hemorrhage.
2. Pernicious anemia and leukemia.
3. Pre-operative and post-operative transfusions.
4. Sepsis.

1. *Hemorrhage:* The hemorrhage of the hemophiliac patient is a very gratifying field for transfusion. It seems that in childhood the hemophiliac tendency may be absolutely and permanently cured by a single transfusion of blood.

Most striking results are achieved in hemophilia neonatorum (melena neonatorum). These infants are usually brought to the hospital on the second or third day after birth in a most exsanguinated condition. An interne is immediately sent to the mother's home and returns with 100 cubic centimeters of citrated blood. Blood tests are not necessary, for the mother's blood never hemolyzes the blood of the newborn infant (Langrock and Cherry). This blood is injected into the median cephalic vein of the baby with the aid of a fine cannula. The bleeding stops immediately in the vast majority of cases, and the children develop perfectly normal. I have treated nine such cases and obtained perfect results in six patients. The harmlessness of the sodium citrate for the human body is well demonstrated by the absence of any toxic symptoms in the babies, following the citrate transfusions.

Results in purpura are not nearly so satisfactory as those in hemophilia.

Gastro-intestinal hemorrhage is often of such alarming nature that it requires immediate transfusion. If the bleeding is caused by an ulcer of the stomach, the transfusion ought to be followed by an operation, in order to prevent recurrence of hemorrhages.

Every severe case of typhoid fever ought to have a donor tested, even before any signs of hemorrhage occur. The transfusion can then be done immediately, if occasion should arise, without loss of valuable time.

In the same way a donor ought to be on hand before a very cholemic patient is operated upon (common duct stone, pancreatitis, etc.). Many lives can thus be saved, if the emergency can be properly met.

It is unnecessary to dwell on the advantage of blood transfusion in ruptured ectopic pregnancy. The transfusion ought to be given immediately after the operation. The chances for the patient's speedy recovery are thus materially improved.

The post-operative hemorrhages following operations on stomach, kidney, bladder, etc., often stop immediately after a transfusion of blood, without any further surgical interference.

The recent world war has proven the efficiency of transfusions following traumatic hemorrhages, beyond doubt. Thousands of lives have been saved by the immediate transfusion of blood. Two methods were used by the allied forces, the paraffinized glass cylinders and the citrate method. The latter method was designated as the method of choice for the American Expeditionary Forces.

2. *Diseases of the Blood:* No permanent cures can be expected from transfusions in pernicious anemia. However, the life of the patient can be lengthened materially and the rapid progress of the disease can be arrested temporarily by repeated transfusions of blood.

Transfusion is of very little clinical value in leukemia, especially in the acute stage.

Primary and secondary anemia often show wonderful improvement following transfusion of blood.

3. *Preoperative and post-operative transfusions:* Blood transfusion as a pre-operative measure ought to be used very frequently. Patients weakened by diseases of long duration will stand even large operative procedures very much better if they are transfused on the day preceding the operation.

In the same way, transfusion will hasten the convalescence of a debilitated patient after operation.

4. *Sepsis:* The very acute forms of sepsis are not benefited by transfusion. In fact, blood transfusion should not be used in these cases, as the injection of blood may cause very alarming symptoms. However, extensive use of blood transfusion ought to be made in the subacute and chronic forms of sepsis.

It seems to be the consensus of opinion that the citrate method will gradually supplant all other methods of blood transfusion. It is absolutely safe and so simple that any physician can make use of it in cases of emergency.

Discussion.

Dr. Emanuel Libman, of New York, said that he would like to take up one or two interesting points that had been made. Dr. Sanford had described very fully the newer methods of diagnosis of pernicious anemia. One of the most important older diagnostic methods was the presence of macrocytic blood, with a color index of one or over one. It was important to look over the blood very carefully and, by the presence of macrocytic cells, one might diagnose the disease long before the patient became anemic. The nervous symptoms also were important for diagnosis. In pernicious anemia there would often be found a Babinski reflex on one side or on both, and no other form of anemia, so far as the speaker knew, would give the Babinski reaction. The question of differential diagnosis between pernicious anemia and neoplasm would have to be considered. In new growth there was a similar blood reaction, but the index was usually below one, and there would sometimes be found cells in the blood which were characteristic of new growth. In regard to aplastic anemia—this term could be applied where there were no nucleated red blood cells and no erythroblastic cells in the bone marrow—the lymphocytosis was very high. Aplastic anemia was rare and some of the cases so termed were really cases of aleukæmic leukemia. The importance of recognizing these last cases lay in the fact that there was no result to be obtained by transfusion or splenectomy. I agree in the main with Dr. Hamman, but do not consider that focal infections had any influence in the causation of pernicious anemia. As soon as one found the cause of an anemia, it was no longer a case of so-called pernicious anemia. It would be well to attend to minor infections of the teeth and so on, but such important procedure as surgery of the gall-bladder had better be left alone, except in cases of emergency. Arsenic, of course, might be of use on account of the tonic effect. In regard to the treatment of the intestinal tract, usually there was increased putrefaction because of the lack of normal B. coli. The artificial implantation of B. coli in some people had aided in lessening the auto-intoxication and had raised the efficiency of the patient, and in this sense the method would help along.

As regards transfusion, it was important to consider the hydræmic cases. They should be put first on the Karrel diet or else one might get cardiac insufficiency or congestion of the lungs. It could be said that transfusion did not cure pernicious anemia, but it did surely help it. Transfusion has given some benefit. It might initiate a remission. The patient feels an immediate result and the use of transfusion certainly puts him into better shape for the time he has to live. It raises the blood figure and improves the difficulties due to anemia, removes mental symptoms, causes the patient to eat and digest better, although it never brings back the hydrochloric acid or stops the glossitis. Often the patient declares that his tongue is better, although really this is not changed, nor is there a real difference in the neurological condition. Cardiac efficiency is certainly raised and systolic murmurs tend to disappear when the hemoglobin is raised (in general at about 60 per cent). In pernicious anemia one has a reduction of the functional capacity of the kidney, and this can be raised by transfusion.

To use the term pernicious anemia was to call the disease by only one of its symptoms. The anemia was due to an unknown toxin, the glossitis, the achylia and the nervous symptoms were all part of the general process of which the anemia was but one manifestation. In the giving of transfusion, one point was of great importance, and that was not only to make a Wassermann test of the donor, but also to examine the man from head to foot. In one case of which I have heard, a man who had a chancre concealed the fact from the physician. His Wassermann was naturally negative and he was used as a donor, with the result that syphilis was communicated to the recipient. In another case with a negative Wassermann the donor had gumma of the liver. Another point was that if the same donor was used again and again tests should be made for agglutinins and hemolysins, because it appeared that isolysins could develop in the blood of the recipient.

In regard to the citrate method, the later cases of anemia have been mainly transfused by the Unger method; the earlier cases by the suture methods. The citrate method would probably have given the same results. Two points were to be noted about the citrate method. Chills were more frequent in febrile patients with both methods; in cases without fever the figures for chills were higher with the citrate method than with the direct methods. Therefore, in cases in which the patient suffered from a long standing chronic disease and was in a critical condition, it was better to use the noncitrate method. A sharp chill might put the patient in peril of his life. Another question was whether there were any difficulties in cases of renal disease. In one case the patient suffered suppression of urine for twenty-four hours after a citrate transfusion. It is true that he might have had block of the kidney from the ordinary method, but the introduction of a renal stimulant like citrate might exhaust a depressed kidney. This question should be studied for both types of transfusion. In cases of pernicious anemia with fever (over 60 per cent had fever), the effect of transfusion was to lower the temperature to normal and there was no return of fever until the hemoglobin went down again.

Splenectomy was apt to initiate remissions just as transfusion was. It did more because it decreased the hemolysis, and as Schneider's studies had showed, stimulated the bone marrow and decreased the fragility of the red blood cells. Splenectomy carried with it a certain amount of risk, although at the Mayo clinic they had had one series of twenty-nine splenectomies in pernicious anemia without one death. Some cases, however, developed thrombosis. From the reported cases it appeared that splenectomy was of most value in certain cases, namely, those in younger individuals, with large liver and spleen and marked hemolysis.

If the patient was suffering from the anemia of the disease, a transfusion was performed. If that did no good, a second was tried. If a remission was obtained, transfusion was performed when the hemoglobin definitely began to drop again. Transfusions were performed as long as remissions of about three months or over were obtained. After that splenectomy was advised in properly selected cases, and after a remission, due to the latter, terminated, transfusions were again performed. It was important to determine whether a patient holds transfused blood better than before the removal of the spleen. The present opinions were in conflict. I will describe briefly a case which was under treatment for seven years, having had eighteen transfusions done and also a splenectomy. This case and others made it clear that whether or not one decided that transfusions and splenectomy prolong life, the patient was put in much better condition for a larger part of the duration of his life.

Dr. Byron D. Bowen, Buffalo, N. Y.: The natural course of pernicious anemia makes it difficult to interpret therapeutic procedures, and at best one is usually dealing with impressions as regards their value. To illustrate this, a woman entered the hospital two years ago, her blood was so low that she was practically unconscious, after transfusion she improved steadily, leaving the hospital in a few weeks, with nearly a normal blood count. Since that time she has been readmitted three times, with a very low blood, the first two times improvement apparently followed transfusion, but on the third she was refractory to any treatment. In this case, one can almost definitely say that transfusion was a temporary life saving measure, but there came a time when the disease was resistant to this procedure. In connection with transfusion I wish to mention another case of a young man who entered the hospital with severe pernicious anemia, but with no evidence of regeneration. Slight improvement followed the use of 1100 c.c. of citrated blood, two weeks later he failed to respond to a 500 c.c. transfusion from the same donor. His people wished to use a donor outside of family, so a donor of the same group was selected. A few minutes after the transfusion was begun the patient developed a severe chill and became generally livid. The transfusion was stopped, but the patient rapidly lapsed into coma and died in one hour. Subsequent study showed no hemoglobin in the bladder urine, no agglutination in the peripheral blood and rechecking proved both patient and donor to be in the same group. One is tempted to speculate that this reaction was of the nature of an anaphylaxis and that the patient was sensitized to sodium citrate. Since this it has been my custom, when doing succeeding transfusions, to first inject 30 c.c. of citrated blood and complete the procedure in one-half hour if there is no reaction.

Dr. A. H. Sanford in conclusion said that he had often heard the heresy expressed that it was not necessary to select the donor. A man might do one hundred and fifty transfusions without any tests at all and no ill results follow. However, by neglecting the group tests one runs a great risk. The chief point is that the recipient's serum must not agglutinate the donor's corpuscles. A good and tried method is to take the recipient's serum with the corpuscle suspension from the donor and watch for a few minutes for agglutination. Agglutination reactions cover the hemolysins, as has often been brought out. Dr. Lewison's method should be looked upon as more than merely intravenous medication. Transfusion has been referred to at times as a tissue transplant and requires a great deal of skill and judgment in its accomplishment.

One word might be said about Miss Ashby's entirely original work which has surely merited attention. She selects a donor in a different group from the recipient. That is, for a group two patient she will use a group four donor. In her laboratory tests the corpuscles of the recipient are nearly all agglutinated with a large quantity of group four serum used as a diluent. Of course, the recipient's serum does not agglutinate the incoming group four corpuscles. After the transfusion, a sample of the recipient's blood is mixed with group four serum and a microscopic preparation made on the ordinary hemocytometer counting chamber. The patient's corpuscles will agglutinate as before with the group four serum, but there are a large quantity of unagglutinated corpuscles which must be the transfused group four corpuscles. Daily observation of this phenomenon may be made until the unagglutinated corpuscles disappear from the recipient's blood when prepared in the manner described, using group four serum as a diluting fluid. From these studies she has found that the donor's corpuscles live in the recipient's blood as long as thirty days.

Medical Society of the State of New York

MEETING OF THE COUNCIL.

The meeting of the Council of the Medical Society of the State of New York was held in the State Society rooms, 17 West 43d Street, on Saturday, December 13, 1919. Dr. Grant C. Madill, President; Dr. Edward Livingston Hunt, Acting Secretary.

The meeting was called to order by the President, and on roll call the following answered to their names: Drs. Grant C. Madill, Dwight H. Murray, W. Meddaugh Dunning, Edward Livingston Hunt, Parker Syms, J. Richard Kevin, Henry Lyle Winter, Charles H. Peck, Frederic E. Sondern, Frederick C. Holden, Luther Emerick, T. Avery Rogers, John H. Pratt and Albert T. Lytle.

A quorum being present, Dr. Madill announced the meeting open for business.

Dr. Hunt, Acting Secretary, read the minutes of the last meeting.

Moved, seconded and carried that they be approved.

Dr. Hunt, Acting Secretary, presented the following resolutions:

The Council of the Medical Society of the State of New York records with deep regret the death on November 19, 1919, of Dr. Floyd Milford Crandall, Secretary of the State Society since March, 1916.

Dr. Crandall was born in Belfast, New York, May 2, 1858. After graduating from the Geneseo Valley Seminary in 1879 and devoting a short period to teaching, he moved to New York City and entered the New York University Medical College from which he received the degree of M.D. in 1884. He served two years as a member of the House Staff of Bellevue Hospital and in 1886 began the practice of medicine, devoting much of his time to Pediatrics. He was attending physician to the Minturn and Infants Hospital, New York City Children's Hospital and Schools, Skin and Cancer Hospital, Out-Patient Department of Bellevue Hospital and the Northwestern Dispensary.

He early became a member of the Medical Society of the County of New York, which honored him in 1904 by electing him Vice-President, and in 1905, President of the Society. This was a period of great activity and importance to the entire profession of the State, as it was the time of the consolidation of the New York State Medical Association and the Medical Society of the State of New York. Dr. Crandall's decisions were never given hastily, always after mature thought and deliberation. His knowledge of the medical laws of the State, and of the laws governing medical societies was of inestimable value to the Society and to those with whom he worked.

After retiring as President, he continued his interest and activities in the County Society, as a member of many of its committees, and as Chairman of its Board of Censors. He was a conscientious attendant at all the meetings, from which nothing but illness or the call of a patient ever prevented his being present.

Dr. Crandall was an active member of the House of Delegates of the American Medical Association, and a member of its Committee on the Revision of By-Laws.

In addition to his work in the State and County Societies, Dr. Crandall devoted much time to editorial and literary work. He was a member of the Staff of the *New York Medical Journal* and *Gaillard's Medical Journal*, and in 1895 assumed the editorship of the Archives of Pediatrics. He was Acting Editor of the *New York State Journal of Medicine*, and during the absence of the Editor in France, the author of its editorials. He was also active in teaching, at one time being connected with the New York Polyclinic Medical School.

Among the many positions in the medical world held by Dr. Crandall, was that of President of the Society of the Alumni of Bellevue Hospital, and Chairman of the Pediatric Section of the New York Academy of Medicine.

The Council feels that in the death of Dr. Crandall, the Medical Society of the State of New York has lost a loyal and untiring worker, one who gave freely of his best, always putting the welfare and interest of the Society above personal consideration.

Bt It, Therefore, Resolved, that this memoriam be spread upon the minutes of the Council and that a copy be sent to his family.

EDWARD LIVINGSTON HUNT,
Acting Secretary.

Moved, seconded and carried that these resolutions be received and spread upon the minutes of the meeting.

Moved, seconded and carried, that Dr. Edward Livingston Hunt, be appointed Secretary to fill the vacancy left through the death of Dr. Crandall.

Moved, seconded and carried, that Dr. Edward Livingston Hunt be appointed a member of the Committee on Finance to fill the vacancy left through the death of Dr. Crandall.

Moved, seconded and carried, that Dr. Edward Livingston Hunt be appointed a member of the Committee on By-Laws to fill the vacancy left through the death of Dr. Crandall.

Dr. Peck, Chairman of the Committee on Arrangements, presented the following as members of his Committee for approval by the Council: Drs. Charles H. Chetwood, Frederick T. van Beuren, J. Bentley Squier, Ten Eyck Elmendorf, Ernest Fahnestock, John A. Lee and Philip Eichler.

Moved, seconded and carried that they be approved.

Dr. Peck also stated that he had been considering a suitable room for the opening meeting, and that he had the refusal of the ballroom at the Hotel Astor and the Hotel Pennsylvania.

Moved, seconded and carried, that the selection of the room for the opening meeting be left to Dr. Peck.

Dr. Kevin, Chairman of the Committee on Legislation, read the following report:

To the Council of the Medical Society of the State of New York:

Relative to your resolution of May 18, 1919, "That the communication from Dr. Winans in regard to the administration of anæsthetics by internes be referred to the Committee on Legislation to consider and report back to the Council," I beg to make the following report:

The question of anæsthetics has been debated by the profession of New York State for years and no unanimous opinion as to its legal standing has so far been agreed on or accepted.

Without going into a lengthy argument I believe the law as it stands has been interpreted by Judges of the Supreme Court to imply that the Surgeon operator is responsible for the anæsthetic whoever administers it.

If this is the true interpretation, it seems to be as good and as elastic a law as the profession would want.

If the interpretation as defined by the Staff of the Hahnemann Hospital of Rochester, N. Y., is absolutely correct, then I am safe in declaring that every hospital in New York State is guilty of permitting anæsthetics to be given illegally, since perhaps 90 per cent of internes do not obtain their certificate from the Board of Regents, until after they have fulfilled their interneship, or at least until they have given many anæsthetics.

Then again, those of our membership who make a specialty of anæsthetics are laboring hard as a body to legislate against trained nurses being legally qualified to give anæsthetics. Because of their progress, the lecturer of the Long Island College in Brooklyn refused to give a course to their nurses and I understood the College Board dismissed him.

Many of the Brooklyn Hospitals have employed trained nurses in giving anæsthetics, and they report greater satisfaction from this method than from the old desultory fashion of having a new interne, frequently most inefficient, assume this grave responsibility.

In conclusion, your Committee recommends before any material changes be advocated in the law, that a new Committee, representing all parts of the State be appointed by the President to study the question from its various angles as it affects the profession, and report their recommendations to the next House of Delegates.

J. Richard Kevin,
Chairman.

Moved, seconded and carried that the report be accepted with the exception of that part which referred to the appointment of a Special Committee.

Dr. Kevin presented the name of Dr. Albert T. Lytle as a member of the Committee on Legislation, and stated that he had invited Dr. James F. Rooney to act as the third member. As he had not yet received a reply from Dr. Rooney, he asked the Council to give him power to fill the vacancy in case Dr. Rooney declined to act.

Moved, seconded and carried that Dr. Lytle be approved a member of the Committee, and that Dr. Kevin be authorized to appoint the third member as seemed best to him.

Dr. Winter, Chairman of the Committee on Medical Economics presented the following as members of his Committee for approval by the Council: Drs. Arthur F. Chace, George W. Kosmak, Wesley T. Mulligan, and Henry G. Webster.

Moved, seconded and carried that they be approved.

Dr. Winter also stated that his Committee was engaged in the study of the demands for an extension of public health work, and was in complete accord with the Special Committee on Compulsory Health Insurance.

Dr. Sondern, Chairman of the Committee on Medical Research, presented the following as members of his Committee for approval by the Council:

Drs. Samuel A. Brown, Charles L. Dana, W. Gilman Thompson, Alvah H. Doty, Haven Emerson, James Ewing, Simon Flexner, Karl M. Vogel, William P. Healy, Alfred F. Hess, Samuel W. Lambert, William H. Park, James E. Sadlier, H. Ernest Schmid, J. Bentley Squier, John S. Thacher, S. W. S. Toms, Henry L. Winter, Francis C. Wood, Elias H. Bartley, William F. Campbell, J. Richard Kevin, John C. MacEvitt, Frank Overton, Joshua M. VanCott, Hermon C. Gordinier, Albert Vander Veer, Sherwood V. Whitbeck, George F. Comstock, Grant C. Madill, Charles Stover, T. Wood Clarke, Charles B. Forsyth, Hersey G. Locke, A. Walter Suiter, Arthur W. Booth, Luzerne Coville, R. Paul Higgins, Robert M. Elliott, Wesley T. Mulligan, Ethan A. Nevin, G. Kirby Collier, Harvey R. Gaylord, Matthew D. Mann, Nelson G. Richmond, Charles G. Stockton, Bernard F. Schreiner, and Herbert U. Williams.

Moved, seconded and carried that they be approved.

Dr. Edward Livingston Hunt presented his resignation as Secretary of the Section on Neurology and Psychiatry, as it would be impossible for him to carry out these duties in addition to those as Secretary of the State Society.

Moved, seconded and carried that the resignation be accepted.

Dr. Hunt presented the name of Dr. Michael Osnato to fill the vacancy left through his resignation.

Moved, seconded and carried that Dr. Osnato be appointed Secretary of the Section on Neurology and Psychiatry.

Owing to the Treasurer's inability to be present, the Secretary presented the following report:

The Treasurer wishes to present to the Council the following facts, which show that the excess of expenditures over receipts during the past three years can be accounted for in carrying out resolutions passed by the House of Delegates.

25 per cent increase ($1,800.00 per annum) Counsel's salary. (Recommended by House Delegates April, 1917, and passed by Council May 31, 1917.)	$3,223.33	
Printing and mailing war time agreement (House of Delegates April 24, 1917.)	879.97	
		$4,103.30
Excess of expenditures, 1917	$2,877.29	
Excess of expenditures, 1918	895.24	
		3,772.53

There will also be an excess of expenditures in 1919, in spite of the fact that the receipts are exceedingly satisfactory. It is impossible to give the exact figure at the present moment, as to the amount of this deficit, but a part of it will be due to the expenses of the Special Committee on Compulsory Health Insurance, appointed in compliance with the resolution of the House of Delegates at the last Annual Meeting.

Moved, seconded and carried that the report be accepted and placed on file.

Dr. Syms, Chairman of the Committee on Scientific Work, reported satisfactory progress in the work of his Committee.

As Dr. MacEvitt, Editor of the Journal was still away, the question of appointing an Acting or Assistant Editor to fill the vacancy left through the death of Dr. Crandall was considered.

Moved, second and carried, that the question be left to the Committee on Publication with power.

Dr. Lytle, Secretary of the Special Committee on Compulsory Helath Insurance, presented the transactions of the Special Committee for filing in the State Society office.

There being no further business, the meeting adjourned.

Edward Livingston Hunt,
Secretary.

Notice

The attention of those expecting to attend the coming Annual Meeting of the State Society in New York City, is drawn to the importance of securing their hotel reservations as far in advance as possible, as otherwise they may find it difficult to secure the accommodations they desire.

County Societies

MEDICAL SOCIETY OF THE COUNTY OF ERIE.

Oswego, Tuesday, November 18, 1919.

Thirty members and a number of guests were present.

Dr. L. deL. Pulsifer called attention to the fact that while Vice-President of the Society, Dr. Fox entered the service of the Medical Corps of the Army, and that having now returned he merited honorable recognition from the Society by bestowal of the presidency. The election resulted as follows:

President, Dr. F. E. Fox; Vice-President, Dr. L deL. Pulsifer; Secretary, Dr. W. H. Kidder; Treasurer, Dr. H. M. Doane; Delegate to State Society, Dr. W. H. Kidder; Censors, Dr. L. F. Hollis, Dr. E. J. Drury, Dr. P. M. Dowd, Dr. J. T. Dwyer, Dr. A. W. Irwin.

The report of a Committee on the Establishment of a County Laboratory was made and accepted, and the committee was continued with added powers.

The report of the Chairman of the Legislative Committee gave brief survey of the work in connection with prospective compulsory health insurance legislation, and called attention to the necessity of union among physicians and loyalty to high standards.

The following resolutions were then introduced and passed:

WHEREAS, It has come to our knowledge that in the heat of argumentation and under the haste seemingly made necessary by impending legislation unfriendly to physicians, some who have worked tirelessly to prevent the passage of such legislation, have mistakenly criticised chosen leaders of the profession and started controversies which threaten the development of schisms in the State Society; and,

WHEREAS, Through more than a hundred years the Medical Society of the State of New York has succeeded in furthering the development of high ideals among its members and in establishing the profession in a position of power and dignity, be it,

Resolved, That, while commending all physicians for their good work against compulsory health insurance legislation, the Medical Society of the County of Oswego deprecates the critical spirit of some, and especially deplores any act which might lessen the cohesion of its parts or lower the standards of dignity in the Medical Society of the State of New York: and further, be it,

Resolved, That copies of these resolutions be mailed to medical societies throughout the State.

And also,

Resolved, That it is the sense of this Society that the State Workman's Compensation Laws be amended to the end that an injured employee may have a voice in the choice of his physician.

And also,

WHEREAS, In another season the Medical Society of the County of Oswego will have reached its one hundredth year of existence; Be it,

Resolved, That the present President appoint a committee of three to plan and arrange for a suitable celebration of the Centenary of the Society, said committee to report at the semi-annual meeting.

The application for membership of Dr. Francis C. Clark was received, who, after two and a half years of service in the Medical Corps of the Navy, has located in Oswego. Having been accepted by the censors, Dr. Clark was elected to membership.

Upon the invitation of Dr. Hollis, Superintendent, the Society chose the County Sanitarium at Orwell as the place of the semi-annual meeting in May, 1920.

SCIENTIFIC PROGRAM

The President's Address, "Oral Sepsis," Edward M. Anderson, M.D., Fulton.

"Mental Deficiency, Ethan A. Nevin, M.D., Newark, Superintendent Custodial Asylum.

"The Rectum and Its Diseases," Alexander C. Calisch, M.D., Oswego.

"Medical Service in the Line," Harvey S. Albertson, M.D., Oswego.

SUFFOLK COUNTY MEDICAL SOCIETY.

ANNUAL MEETING, RIVERHEAD, N. Y.

Thursday, October 30, 1919.

The meeting called to order at the Griffin House.

The following officers were elected for the ensuing year: President, David Edwards, East Hampton; Vice-President, Edwin S. Moore, Bay Shore; Secretary, Frank Overton, Patchogue; Treasurer, John W. Stokes, Southold; Censors, William A. Hulse, Bay Shore; Frank S. Child, Jr., M.D., Port Jefferson; Melville Skidmore, M.D., East Moriches.

On motion, duly seconded, and carried, the Society voted to co-operate with the State Society in securing data regarding the incomes of physicians.

SCIENTIFIC SESSION.

President's Address, "Medical Ethics," Winfield S. Bennett, M.D., Patchogue.

Report of the Committee on Hospital Facilities at the County Alms House, William H. R. Ross, M.D., Brentwood.

"Uterine Retroversion, Its Causes and Prevention," John O. Polak, M.D., Brooklyn.

"The Feeble Minded Prostitute in Suffolk County," Miss Jennie E. Lawton, U. S. Social Hygiene Board.

COLUMBIA COUNTY MEDICAL SOCIETY.

ANNUAL MEETING, HUDSON, N. Y.

Tuesday, October 7, 1919.

The meeting was held at the Worth House, with over half of the members in attendance.

The following officers were elected for the ensuing year: President, George W. Vedder; Vice-President, Sherwood V. Whitbeck; Secretary and Treasurer, Charles R. Skinner; Censors, Louis Van Hoesen and Clark G. Rossman, Hamilton M. Southworth, Roscoe C. Waterbury and Charles L. Nichols; Delegate State Society, William D. Collins, Alternate, Charles R. Skinner.

Drs. Van Hoesen, Southworth, Bradley, Wilson and Oliver were appointed to personally visit and confer with the local candidates for member of assembly in opposition to the enactment of the expected Health Insurance Bill.

A resolution was also adopted, "That the delegate of the Society to the meeting of the House of Delegates of the State Society, be instructed to oppose Compulsory Health Insurance."

The new Board of Censors was appointed by the President as the Legislative Committee, with Dr. Louis Van Hoesen, to act as chairman.

SCIENTIFIC SESSION.

Address, Luther Emerick, M.D., "Saugerties," President of the Third District Branch.

"Résumé of the Legal Requirements of the Profession," William D. Collins, M.D., Hudson.

"Experience in a Base Hospital," John L. Edwards, M.D., Hudson.

MEDICAL SOCIETY OF CLINTON COUNTY.

ANNUAL MEETING, PLATTSBURG, N. Y.

Tuesday, November 18, 1919.

The meeting was held jointly with that of the Fourth District Branch at the Y. M. C. A., Plattsburg. The County Society held its business session separately, and elected the following officers for the ensuing year:

President, Arthur A. DeGrandpre; Vice-President, Clarence R. Hutchins; Secretary, William H. Ladue; Treasurer, Jefferson G. McKinney; Censors, Warren H. Everett, J. H. La Rocque and John J. Robinson; Delegate to State Society, William U. Taylor; Committee on Certified Milk, Leo F. Schiff, William H. Ladue and Jefferson G. McKinney; committee to co-operate with similar committee appointed by the health officers of this region in the endeavor to secure the establishment of a district laboratory at Plattsburg, Leo F. Schiff, William H. Ladue and Jefferson G. McKinney.

The scientific program was the same as that presented by the Fourth District Branch.

ESSEX COUNTY MEDICAL SOCIETY.

ANNUAL MEETING, PORT HENRY, N. Y.

Tuesday, October 7, 1919.

The meeting was called to order by the President at the Lee House at 2:30 P. M.

The following members were present: Drs. Barton, Jr., Canning, Cummins, McCasland, Saville, Sherman, Turner and Payne.

The minutes of the previous meeting were read and approved.

The President appointed as nominating committee for officers for 1920 Drs. Turner, McCasland and Barton, Jr. This committee reported the following nominations: President, John H. Evans; Vice-President, Guy S. Houghton; Secretary, Charles R. Payne; Treasurer, William T. Sherman; Censors, Herbert S. McCasland, Robert T. Saville and Melvin H. Turner; Delegate to State Society, Lyman G. Barton, Jr.; Alternate, Thomas J. Cummins.

On motion duly seconded and carried the secretary cast one ballot electing these officers for 1920.

The Committee on Resolutions reported the following resolutions, which were unanimously adopted:

WHEREAS, It has pleased an all-wise Providence to remove from our midst our brother practitioner, Dr. Clarence Sanford Faulkner, who died at his home in Elizabethtown, October 17th, 1918, and

WHEREAS, By his death the Essex County Medical Society lost a staunch and loyal member and the community a skilled physician and honest, unselfish citizen devoted to the public welfare, therefore,

Be It Resolved that we the members of the Essex County Medical Society do hereby express our sincere regret at the untimely death of our brother and extend to his widow our heartfelt sympathy, and

Be It Further Resolved that these resolutions be spread upon our minutes and a copy forwarded to Mrs. Faulkner.

J. H. EVANS,
C. R. PAYNE,
J. P. J. CUMMINS,
Committee.

On motion duly seconded and carried the Secretary be instructed to advise the Senator and Assemblyman from this County that this Society is opposed to compulsory health insurance legislation.

SCIENTIFIC PROGRAM.

Symposium on Influenza.
Etiology—Lyman G. Barton, Jr., M.D., Willsboro.
Symptoms—Melvin H. Turner, M.D., Ticonderoga.
Complications—William T. Sherman, M.D., Crown Point.
Treatment—Robert T. Saville, M.D., Mineville.
Methods for Controlling Epidemic—Thomas J. Cummins, M.D., Mineville.

A general discussion followed by all present.

Books Received

Acknowledgment of all books received will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

AMERICAN ILLUSTRATED MEDICAL DICTIONARY (DORLAND). A new and complete Dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Science, Nursing, Biology, and kindred branches; with new and elaborate tables. Tenth Edition, Revised and Enlarged. Edited by W. A. NEWMAN DORLAND, M.D. Octavo, 1201 pages, 331 illustrations, 119 in colors. Containing over 2,000 new terms. Philadelphia and London: W. B. Saunders Company, 1919. Flexible leather, $5.50 net; thumb index, $6.00 net.

NERVOUS AND MENTAL DISEASES. By ARCHIBALD CHURCH, M.D., Professor of Nervous and Mental Diseases in Northwestern University Medical School, Chicago; and FREDERICK PETERSON, M.D., formerly Professor of Psychiatry, Columbia University. Ninth edition, revised. Octavo volume of 949 pages, with 350 illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Cloth, $7.00 net.

A MANUAL OF OBSTETRICS. By JOHN COOKE HIRST, M.D., Associate in Gynecology, University of Pennsylvania; Obstetrician and Gynecologist to the Philadelphia General Hospital. 12mo of 516 pages with 216 illustrations. Philadelphia and London: W. B. Saunders Company, 1919. Cloth, $3.00 net.

STATE OF IOWA. Eleventh Biennial Report of the Board of Control of State Institutions for the period ending June 30, 1918. Des Moines, 1918.

A MANUAL OF HYGIENE AND SANITATION. By SENECA EGBERT, A.M., M.D., Seventh Edition, enlarged and thoroughly revised. 12mo. of 554 pages, illustrated with 160 engravings and 5 plates. Philadelphia and New York, Lea & Febiger, 1919. Cloth, $3.00.

EXPERIMENTAL PHARMACOLOGY. By HUGH MCGUIGAN, Ph.D., M.D. Octavo of 251 pages, illustrated with 56 engravings and 7 colored plates. Philadelphia and New York, Lea & Febigen, 1919. Cloth, $2.75.

Book Reviews

MENDERS OF THE MAIMED. The Anatomical and Physiological Principles Underlying the Treatment of Injuries to Muscles, Nerves, Bones and Joints. By ARTHUR KEITH, M.D. (Abdn.), F.R.C.S. (Eng.), LL.D. (Abdn.), F.R.S., Conservator of the Museum and Hunterlian Professor Royal College Surgeons, England. Oxford University Publications, New York City, 1919. Price, $6.50.

The first six chapters are historical and of true interest. Beginning with John Hunter's and continuing through Duchenne's life, the development of the fundamental principles of orthopedics is described in a fascinating manner. The principles of orthopedics are interwoven in the lives of Hilton, Thomas, Hall and Stromeyer and the author brings out the epochs distinctly.

The remainder of the book has to do with modern developments and methods such as nerve degeneration and regeneration, tendon and bone transplant, bone graft and bone setting.

The reading of this book was to the reviewer both instructive and interesting. J. C. R.

The Medical Clinics of North America. Chicago Number. July, 1919. Volume 3, Number 1. Published Bi-monthly by W. B. Saunders Co., Philadelphia.

This is the first number of the third volume of these Clinics and in entering the third year of their publication they have established a very definite place in the current medical literature.

This particular number is the Chicago number and therefore is composed of reports of clinics at the various hospitals of that city.

As usual, those interested in pediatrics will find much of value and importance in articles by Drs. Isaac A. Abt, Julius H. Hess and Clifford G. Grulee.

As is proper, in view of the fact that it is the largest hospital in Chicago and one of the largest in the country, Cook County Hospital has six clinics reported out of a total of seventeen articles, with Michael Reese Hospital a good second with four. Any one who has visited Chicago or otherwise knows of the high standard of medical work done there, will not be disappointed in the exposition of that work presented in this issue of the "Clinics."

The articles are too numerous and of too uniform a grade of excellence to permit of an analysis and criticism in the limited space of this review.

W. H. Donnelly.

Tuberculin and Vaccine in Tubercular Affections. A practical guide for the Utilization of the Immune Response in General Practice. By Ellis Bonime, M.D., Adjunct Professor Surgery and Division of Immunotherapy, N. Y. Polyclinic Medical School and Hospital. Southworth Company, Troy, 1917.

This is a carefully written book embodying the results of the author's experience with tuberculin and vaccines in tuberculous conditions. The author presents in detail the method and dosage for the use of this much misunderstood therapeutic agent and predicts wonderful results with its proper use. He feels that the difficulty of introduction of tuberculin therapy into general practice is due to the improper knowledge of the action of tuberculin in specific cases.

He divides tuberculosis into three stages and indicates the action and results to be expected in these different conditions. The presence of mixed infections in these conditions allows the presentation of the author's methods of using vaccines with an explanation of indications for use. The early diagnosis of tuberculous conditions is urged and the immediate use of the medicine. An excellent series of charts and X-ray pictures are shown in the book illustrating many of the author's cases. The results in the gland and bone conditions certainly show beneficial results with this therapy. Anyone contemplating work in this line should know this book and it is a valuable study for both the internist and the surgeon.

Henry M. Moses.

Industrial Nursing. For Industrial Public Health, and Pupil Nurses, and for Employers of Labor. By Florence Swift Wright, R.N. Published by the Macmillan Co., New York, 1919.

In the field of nursing no phase is expanding more rapidly than that of public health. In turn public health is further subdivided, and industrial nursing, while one of the latest to receive consideration, is rapidly becoming one of its most important. The present demand for qualified industrial nurses far exceeds the supply, principally because nurses know very little about it, either by experience or through books. In fact, practically nothing has been written on the subject until the appearance of this volume, and it fills, therefore, a great need.

The book covers about 150 pages, is printed in clear type, and is logically arranged. The first five chapters describe the development of industrial nursing, the qualifications and training of the industrial nurse, and the elementary principles involved. The industrial nurse is then told what her relations are to her fellow workers and to the community. With this as a basis the following chapters are devoted to describing details of the work itself, such as the first aid room, the day's work, records and reports. Chapter 14 contains a few pages of excellent advice to the nurse concerning her relations to the officers of the industry employing her, and to the workers themselves.

The book is suited not only for use by nurses who wish information about industrial nursing, but is recommended for perusal by industrial physicians and employers of those who direct this particular activity in their plants.

A. E. S.

A Text-Book of Pharmacology and Therapeutics; or, The Action of Drugs in Health and Disease. By Arthur R. Cushny, M.A., M.D., LL.D., F.R.S. Seventh edition, thoroughly revised. Octavo of 712 pages, illustrated with 71 engravings. Philadelphia and New York: Lea & Febiger, 1919. Cloth, $4.50.

This seventh edition of "Cushny" has been thoroughly revised and an interesting innovation is his attempt to reconcile the clinical and experimental results with digitalis. Each year progress is made in this direction and it is probable a full explanation and comprehension of the multiple actions of this drug is not far off.

As always, Cushny's conclusions regarding drug action are conservative and well authenticated. His style is entertaining and verboseness is conspicuous by its absence. While Pharmacology has ever been a "dry" subject to the casual reader, in this work much genuine pleasure and helpful information will reward one for time spent in its perusal.

M. F. De L.

Sterility in Women. By Arthur E. Giles, M.D., B.Sc. (Lond.), M.B., Ch.B. (Vict.), F.R.C.S. (Edin.), M.R.C.P. (Lond.), Captain R.A.M.C. (Temp.), Senior Surgeon to the Chelsea Hospital for Women. Gynæcologist to the Prince of Wales's General Hospital, Tottenham. With Eleven Illustrations. Oxford University Publications, New York City, 1919. Price, $4.00.

This monograph will impress a reader as an honest and carefully prepared presentation of a vast amount of clinical material bearing upon the subject of sterility in women. The author is particularly free from fads or fanciful theories and having analyzed his data frequently leaves the reader to form his own conclusions. The first chapter is very properly devoted to male sterility, its frequency and important relation to the general subject of the unfertile marriage. The causes of female sterility are enumerated under two headings, pathological classification and clinical classification. The latter synopsis is followed in the detailed study of 3,128 case histories, 693 being cases of primary sterility. With such a wealth of material one cannot but regret that more attention was not directed to a consideration of perverted functions, biochemical hostility, and especially the influence of the minor lesions in the female, rather than an effort to cover the entire list of causes such as absence of the vagina, et cetera, which is of only academic interest.

Many tables of statistics are provided, but there is hardly a subject where statistics are less convincing. It must be stated that there is little that is new in this monograph, and Giles makes no such claim, but justifies the publication because of the clinical data available, and because no book on the subject has been brought out in England in many years. Full references are given and an extensive bibliography is provided.

W. H. Cary.

Deaths

Frank D. Crim, M.D., Utica, died November 27, 1919.

Clayton W. Seaman, M.D., Buffalo, died November 13, 1919.

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NOTE.—Original articles are indexed in *italics*. Other abbreviations are as follows: Editorials (E); New Books (B).

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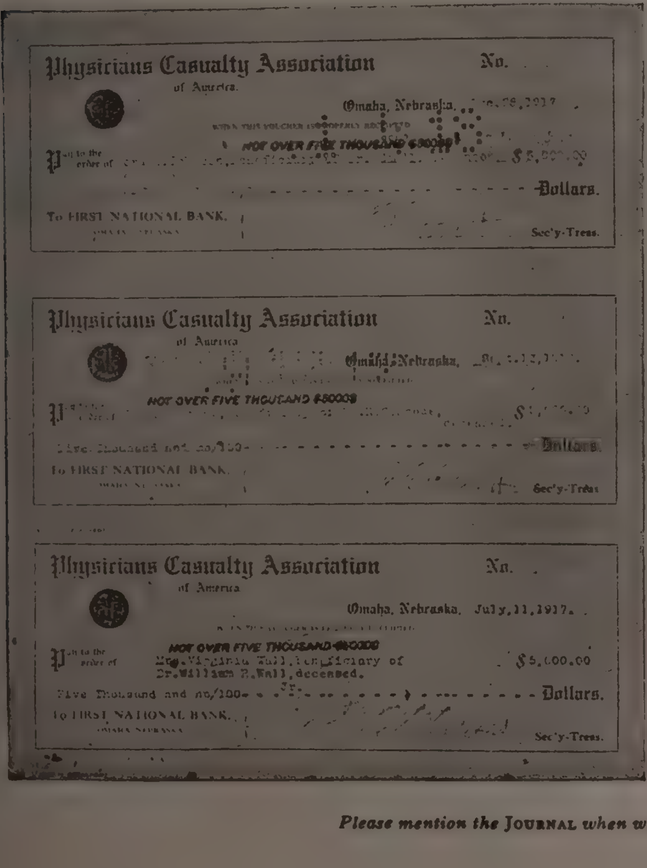

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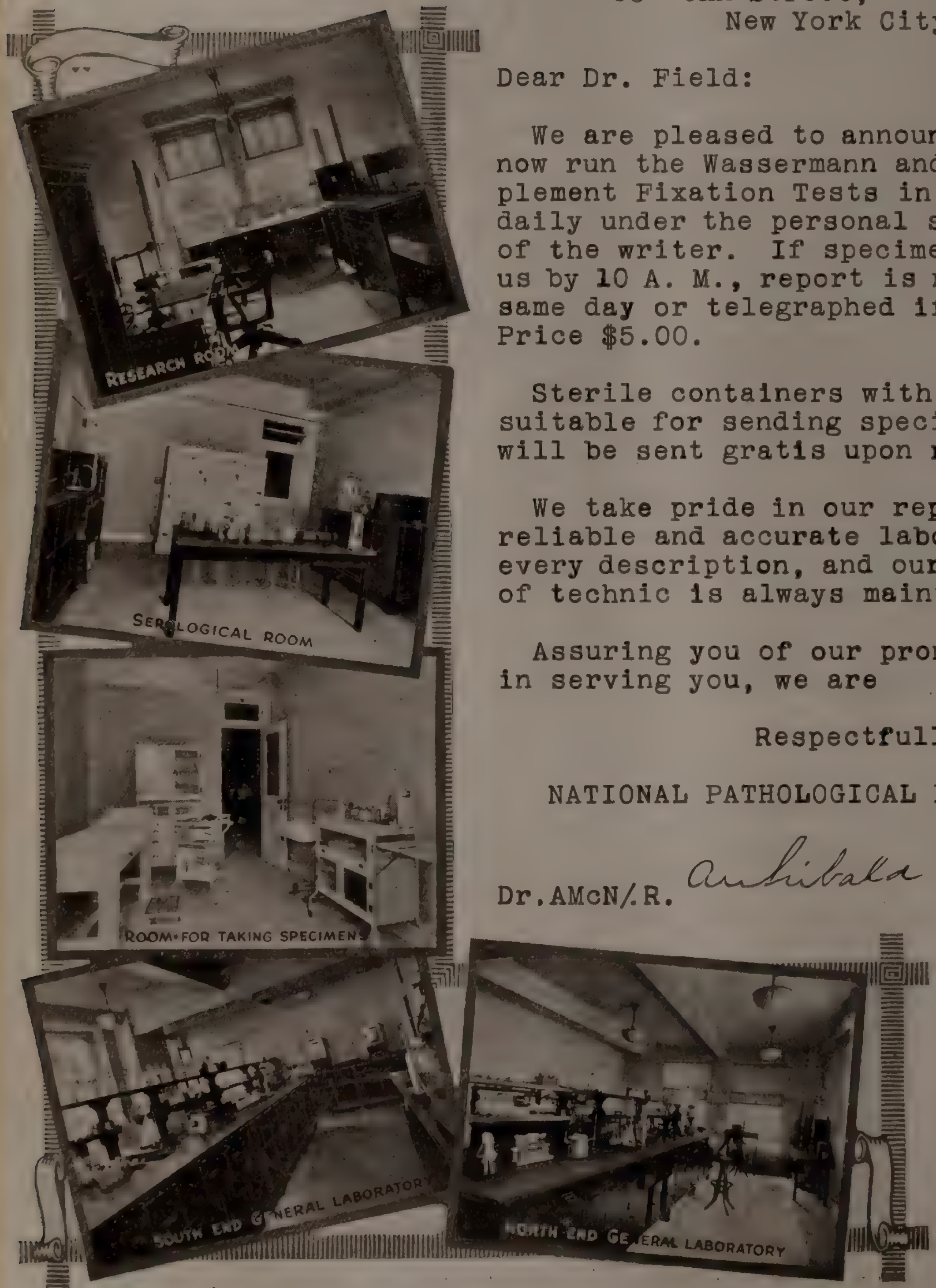
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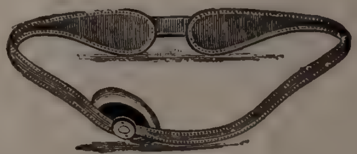

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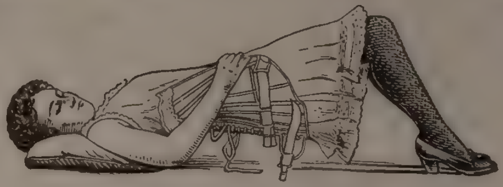

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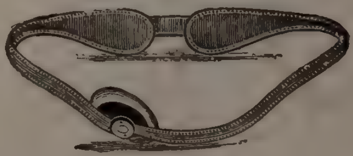

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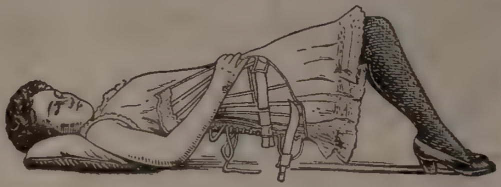

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Blood transfusion.

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Injuries of shoulder joint.
Bismuth paste in intestinal fistula.
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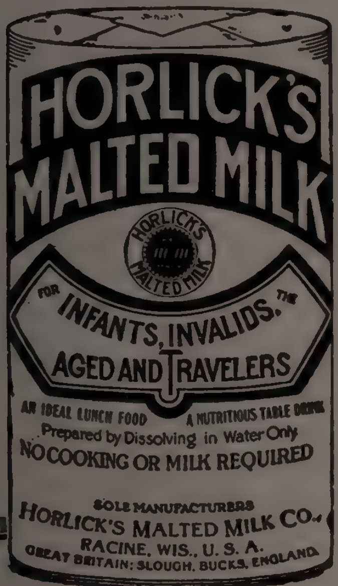

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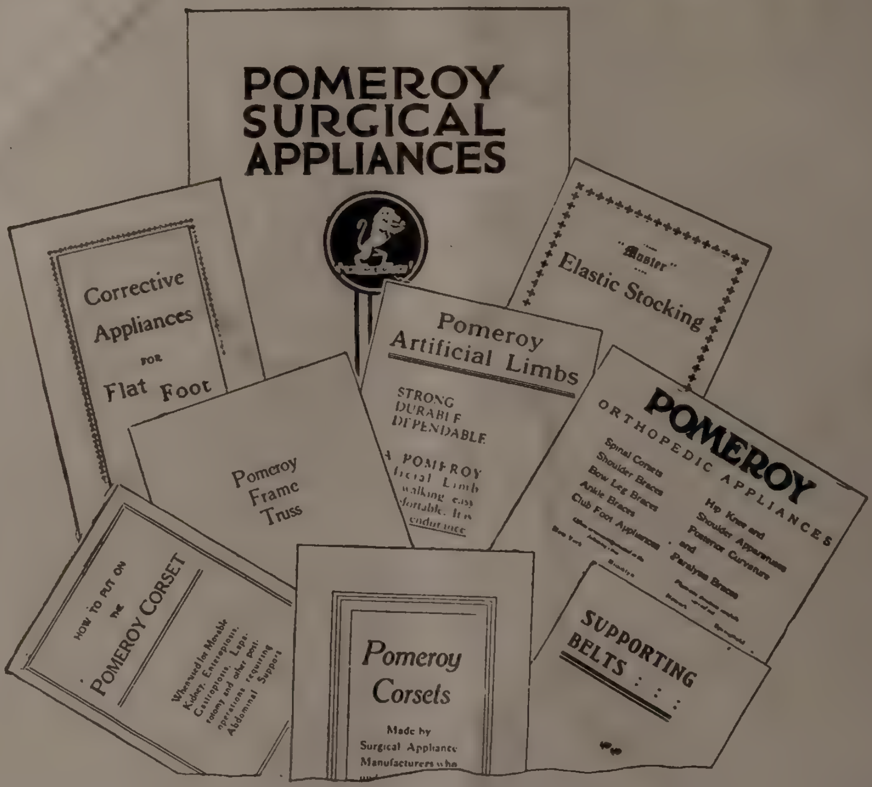

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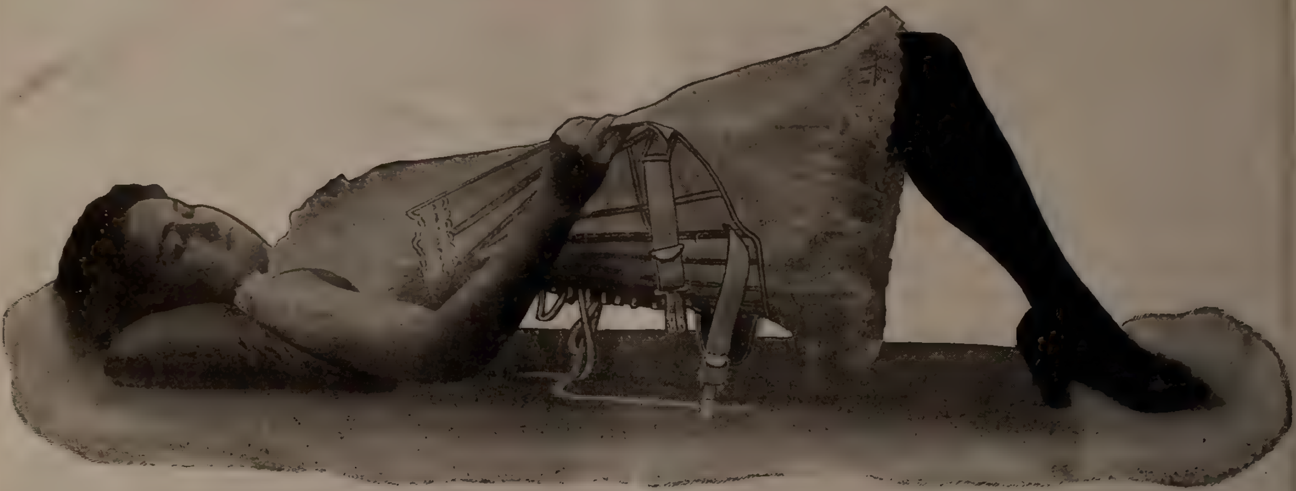

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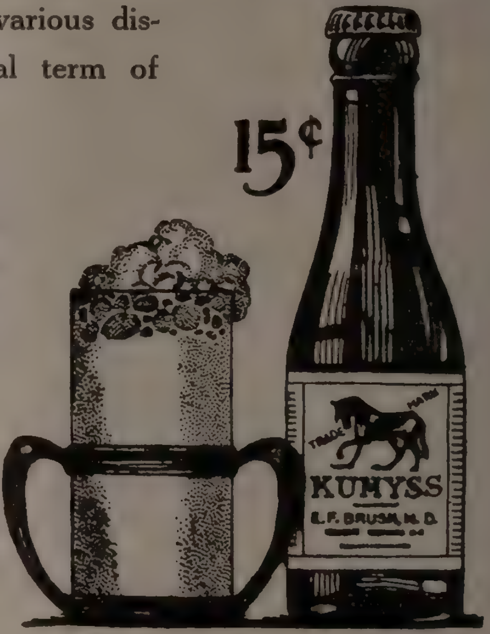

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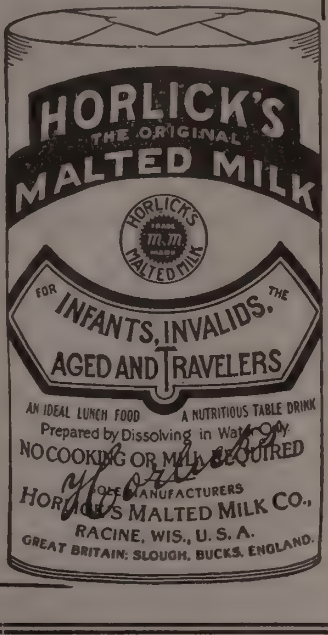
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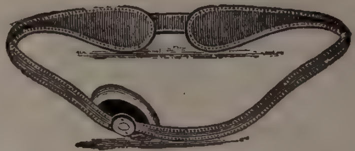

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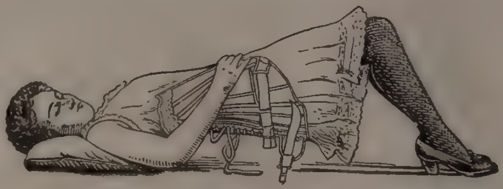

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Reconstruction

The August number of *The Surgical Clinics of Chicago* gives you really an epitome of the great work being done in this field by Army Surgeons at Fort Sheridan, Ill. There are ten of these Reconstruction Clinics in this one number alone.

These Ten Clinics from Fort Sheridan:

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Fate of foreign bodies in tissues.

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Carcinoma of rectum.

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The Story of Kumyss

The first man to give Kumyss its real importance as an article of diet, and to mention its wonderful medicinal qualities, was Dr. John Grieve, a Scotch surgeon, practicing in Russia. Dr. Grieve sent to the Royal Society of Edinborough an enthusiastic article entitled

"Account Of The Method Of Making A Wine, Called By The Tartars, Kumyss, With Observations Of Its Use In Medicine."

Dr. Grieve claimed that in all those conditions "where the body is defective in nourishment or strength" Kumyss will restore health and vigor.

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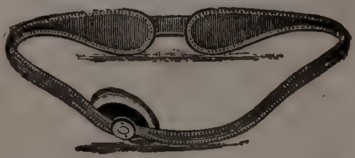

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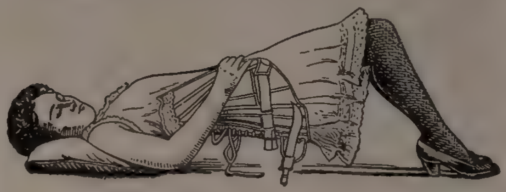

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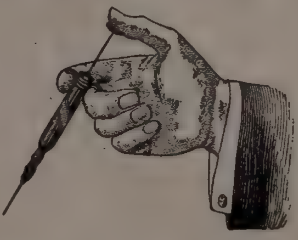

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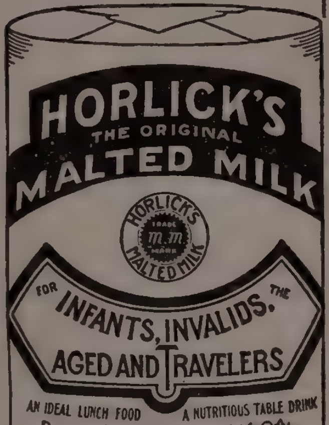

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VOLUME 19 OCTOBER, 1919 NUMBER 10

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Mock's *JUST OUT*

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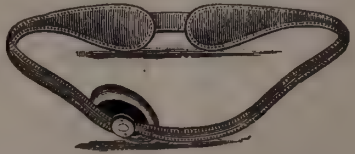

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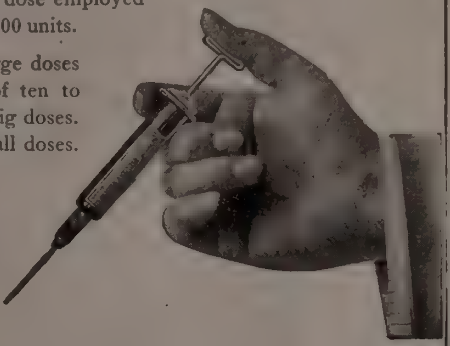

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